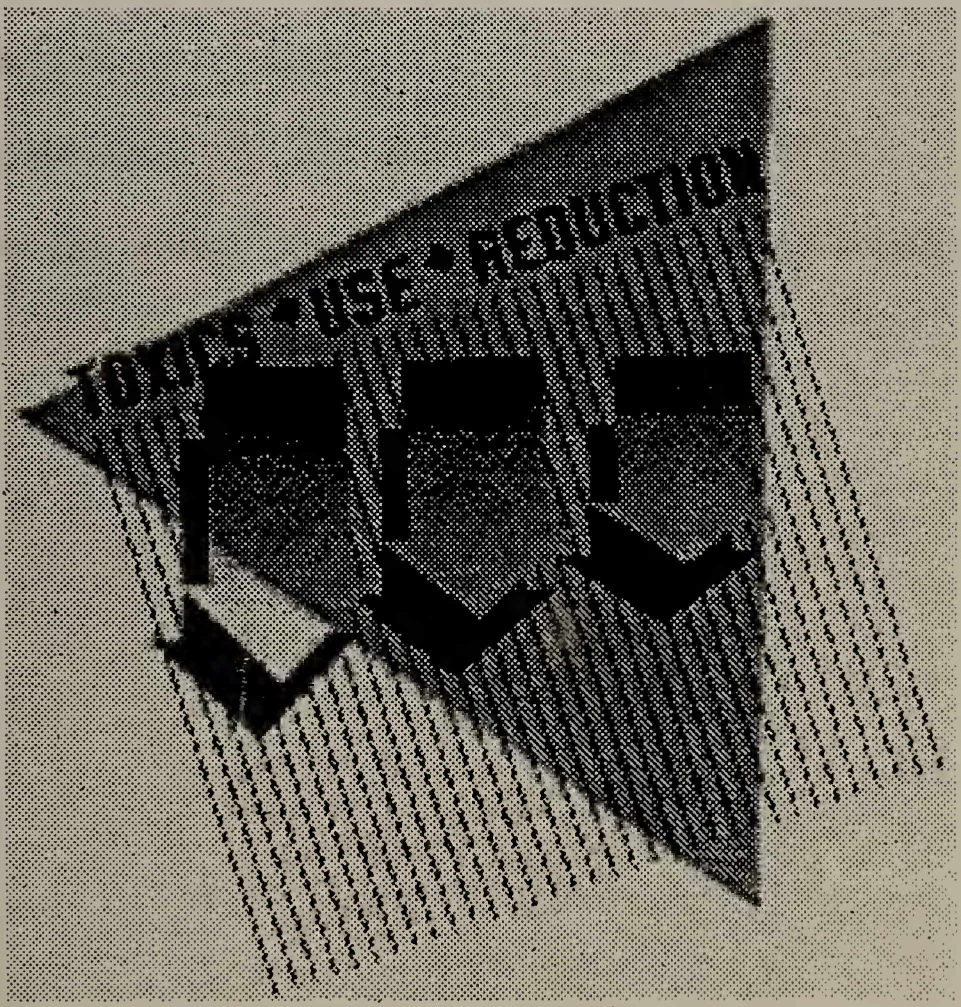
Massachusetts Administrative Council on Toxics Use Reduction

1994 Annual Report

DOCUMENTS COLLECTION
[illegible]
RECEIVED
[illegible]
DOCUMENTS COLLECTION



November 29, 1994

MASSACHUSETTS ADMINISTRATIVE COUNCIL
ON
TOXICS USE REDUCTION

TRUDY COXE, CHAIR, SECRETARY OF ENVIRONMENTAL AFFAIRS

GLORIA LARSON, SECRETARY OF ECONOMIC AFFAIRS

CHRISTINE MORRIS, SECRETARY OF LABOR

DAVID MULLIGAN, COMMISSIONER OF THE DEPT. OF PUBLIC HEALTH

THOMAS POWERS, ACTING COMMISSIONER OF THE DEPT. OF ENVIRONMENTAL
PROTECTION

The Commonwealth of Massachusetts
Executive Office of Environmental Affairs
100 Cambridge Street, Boston, 02202

WILLIAM F. WELD
GOVERNOR
ARGEO PAUL CELLUCCI
LIEUTENANT GOVERNOR
TRUDY COXE
SECRETARY

Tel: (617) 727-9800
Fax: (617) 727-2754

November 29, 1994

Dear Reader,

The Massachusetts Administrative Council on Toxics Use Reduction is pleased to present this Annual Report in accordance with Section 4(D) of MGL 21I, the Toxics Use Reduction Act (TURA). It details the success of the Toxics Use Reduction Program in building the foundation necessary to effectively promote toxics use reduction in the Commonwealth and it documents the many notable accomplishments of the Office of Technical Assistance, the Toxics Use Reduction Institute, and DEP's TURA Office. This Report clearly shows that toxics use reduction can and is being achieved through the variety of mechanisms set out in the statute.

The Report also addresses the Program's start-up and implementation problems and details a strategy to again make this Program a source of pride to Massachusetts industries and environmental advocates alike by building upon the strong base of support which led to TURA's unanimous passage.

The Council wishes to thank the TUR Advisory Board for their leadership and guidance, in particular Sue Swedis the Board's Chair and Kathy Hearn, Chair of the Fee Ad Hoc Group; Ed Jamro from Monsanto and Geoff Brown from Rexham Graphics for their time and comments; Jim Gomes of the Environmental League of Massachusetts for his careful review and insight; all the TURA staff, most importantly Barbara Kelley, Ken Geiser and Suzi Peck who have worked so diligently over the past three years to steer, push and prod the Program to remain a leader in comprehensive statewide TUR initiatives; and lastly, Gina McCarthy who had the task of writing this Annual Report in a way that would truly reflect the strengths and weaknesses of the Program.

Cordially,

Trudy Coxe

100% RECYCLED PAPER

TABLE OF CONTENTS

Purpose and Summary 2
History 4
TURA Program Structure 5
TURA Program Progress 9
TURA Agency Accomplishments 16
- OTA 17
- TURI 24
- DEP 28
- TUR Advisory Board 37
- TUR Administrative Council 39

TURA Fund Expenditures 43
TUR Administrative Council Policy Recommendations 46

Figures

1. Facilities Assisted by OTA
2. Total Use/Byproduct Figures
3. Byproduct Reduction Index Comparisons of 1991 and 1992
4. OTA Organizational Chart
5. OTA Site Visits by Region
6. New Companies Visited by OTA in FY 94
7. Breakdown of OTA Visits in FY 94 by TURA Filers vs. Non-Filers
8. TURI Organizational Chart
9. DEP Organizational Chart
10. Chemicals and SIC Codes in TURA Reporting
11. Reported Chemicals vs. Reportable Chemicals
12. TURA Fund Expenditures
13. TURA Fund Revenues and Expenses
14. Comparison of TURA Fund Revenues and Expenditures
15. TURA Fund Revenues, Appropriations, and Expenditures.

Attachments:

A. TURA Mandates and Accomplishments
B. OTA FY 95 Strategic Plan
C. TURI FY 95 Strategic Plan
D. DEP FY 95 Strategic Plan
E. TURA Agency Staff Lists

This information will be made available in alternate formats upon request.

PURPOSE AND SUMMARY

In July of 1989, the Massachusetts Legislature unanimously passed the Toxics Use Reduction Act (TURA), making Massachusetts the first state in the nation to implement pollution prevention through legislation.

TURA marks a welcome departure from the traditional media-specific, end-of-the-pipe approaches to environmental protection. It is a creative, preventive approach to environmental protection which seeks to stimulate cost effective pollution prevention through changes in products or manufacturing processes which minimize or eliminate the toxics substances used or toxic wastes generated during the process. As opposed to "command and control" enforcement programs which had arguably reached their effective limits, toxics use reduction (TUR) is a new approach to governmental regulation designed to make greater environmental protection not only possible, but to show that what is good for the environment is also good for business.

The passage of TURA was the result of two years of legislative proposals, four months of intense negotiations, and the incorporation of many compromises needed to achieve a strong consensus from all the constituencies. However, TURA does not represent a weak compromise. TURA in fact, represents a strong consensus. To maintain that consensus so critical to the success of the TURA Program, the act required the preparation of an annual report to discuss the implementation of the act and to detail expenditures of industry fees collected in the TURA Fund.
This Annual Report of the Massachusetts Toxics Use Reduction Administrative Council is the first completed and approved in response to Section 4(D) of MGL 21I, the Toxics Use Reduction Act of 1989 which states:

> "The council shall annually make policy recommendations in a report to the governor regarding toxics use reduction, the implementation of this act, including a detailed report of the expenditures made from the Toxics Use Reduction Fund, and the achievement of increased toxics use reduction, and shall file a copy of this report with the clerk of the House of Representatives and the clerk of the Senate."

The report begins with a brief history of the Toxics Use Reduction Act (TURA) and a description of the structure of the Program. An overview of the TURA Program accomplishments and weaknesses is then presented, followed by a complete agency by agency breakdown of services, toxics use reduction accomplishments, work left to be done, and plans for FY 95. The report provides an accounting of

TURA Fund expenditures through FY 1994 as required under the statute, and concludes with three detailed recommendations for consideration by the Governor to promote toxics use reduction (TUR) in the Commonwealth.

As this annual report shows, the TURA Program has succeeded in establishing the foundation necessary to effectively promote toxics use reduction in the Commonwealth. As the first such comprehensive statewide effort, the TURA Program has been a model for other states and nations. However, as one might expect in any such Program which must navigate in previously unchartered waters, the journey has not always been straight or smooth. While the TURA agencies have many notable accomplishments which clearly indicate that TUR can and is being achieved through the variety of mechanisms set out in the statute, these impressive agency accomplishments have in some ways been overshadowed by criticism of the Program's implementation.

Criticism of the TURA Program stems mainly from the slow Program start-up, the lack of devoted Administrative Council staff to manage the Program until recently, resource allocation decisions of DEP, and the recent diversion of TURA Fund monies to support non-TURA related Programs. The lack of clear, easily accessible data to document Program success and the failure to produce an annual accounting of Program expenses has exacerbated these criticisms.

The Administrative Council is confident that the recommended actions detailed at the conclusion of this report, along with the information presented herein (including Program progress, agency accomplishments, fiscal expenditures, and FY 95 agency strategies to address identified Program weaknesses), will help restore the broadbased support necessary to ensure the success of the TURA Program.

HISTORY

As early as 1976, the federal Environmental Protection Agency issued an official policy statement expressing a preference for reorienting environmental regulations to address the use of toxic substances and the generation of toxic waste in production processes. However, not until 1987 did TUR rise to the forefront as an important environmental, business, and political issue. At that time, environmental activists working with the National Toxics Campaign and a number of state Public Interest Research Groups (PIRGs) submitted TUR bills to the legislature in Massachusetts and three other states.

At the time of the filings, there was general consensus on the range of potential benefits from the aggressive identification and implementation of TUR strategies, including: reductions in the total amount of waste entering the environment; bottomline attractions to industry in terms of lower costs and liabilities; increased access of production-line consumers to products with fewer toxic constituents; and lower health risks for workers. However, the early version of the Massachusetts' bill contained several provisions (such as chemical bans and phase-outs) which sparked opposition from the business community and caused legislation to stall.

In 1989, the business community responded to MassPIRG's legislation with the submission of an alternative bill focusing largely on waste reduction rather than use reduction, and containing provisions for the siting of hazardous waste facilities. This alternative bill provoked strong opposition from environmental activists. At this point, the legislative leadership asked the two opposing sides to begin negotiations to develop a compromise piece of legislation.

In June 1989, a compromise had been reached on the major provisions of a TUR bill (business had dropped their demand for treatment facility siting provisions and environmental activists dropped their demand for chemical bans and phase-outs in favor of the establishment of an industry fee structure to finance the Program) leading to the unanimous passage of the Massachusetts Toxics Use Reduction Act (TURA).

TURA PROGRAM STRUCTURE

The Toxics Use Reduction Act may be characterized as having two phases. In the first phase, which will conclude in the end of June 1995, the Commonwealth was mandated to assist industry; to collect information from industry on the types and quantities of toxic materials used and generated by companies operating in the Commonwealth; and to create a regulatory environment that is supportive of investments in toxics use reduction. The accent in this phase is on technical assistance and self-help. Business was required to submit to the state detailed information about its use of toxics, and by July 1, 1994, to prepare toxics use reduction plans.

The second phase of the Act will begin in July 1, 1995, at which time the Administrative Council on Toxics Use Reduction will have the authority to identify industry segments considered to be priorities for achieving toxics use reduction (called "priority user segments"). Once a group is so designated, it will receive more focused technical assistance, and may be subject to increased regulation by DEP. Lastly, a detailed study will be completed by January 1, 1995, discussing potential restrictions to the use of chemicals in the state.

To carry out the above activities, the Toxics Use Reduction Act created four new components or agencies: the TUR Administrative Council, the TUR Advisory Board, the Office of Toxics Use Reduction Assistance and Technology (called OTA, the Office of Technical Assistance within the Executive Office of Environmental Affairs), and the Toxics Use Reduction Institute (TURI) at the University of Massachusetts in Lowell. In addition, a Science Advisory Board was created to consult with TURI on specific issues and the Department of Environmental Protection (DEP) has created a TURA Program Office.

The composition and function of each program TURA agency can be summarized as follows:

The Administrative Council on Toxics Use Reduction: Section 4 of TURA:

Composition:
The Administrative Council on Toxics Use Reduction is comprised of the Secretary of Environmental Affairs, Chair; Secretary of Economic Affairs; Secretary of Labor; Commissioner of DEP; Commissioner of DPH; an employee of the Commonwealth; and the Director of the Office of Science and Technology (currently vacant).

Function:
The duties of the Council entail the establishment of TUR fees to a level necessary to ensure the statutory funding level; the establishment of the list of TUR reportable chemicals; the identification of all federal and state laws, regulations and reporting requirements relating to chemical or hazardous substance production, use, release, disposal, and worker exposure, in order to coordinate agency activities, minimize duplication and increase coordination of enforcement activities, with a focus on toxic use reduction; provision of an annual report to the Governor (this document is the first annual report prepared); and after July 1, 1995 designation of industry groups as Priority User Segments eligible for increased assistance and possibly increased DEP regulation. By virtue of its statutory duties, membership, and the fact that the Secretary of Environmental Affairs (which oversees two of the three main components of the Program) is the Chair, the Administrative Council is ideally suited to serve as the coordinating body and focal point for the TURA Program. Given the diversity of the program and the need for coordination between so many agencies, a strong coordinating role was envisioned for the Council.

Massachusetts Advisory Board on Toxics Use Reduction: Section 5 of TURA:

Composition:
The Advisory Board on Toxics Use Reduction is comprised of 15 individuals including the attorney general or his designee, the executive director of the Massachusetts Water Resources Authority or his designee, and thirteen members of the general public representing various constituencies.

Function:
The Board's role is to advise the Council on TUR policy issues, to provide an open forum for discussion of TUR matters, to establish ad hoc committees when necessary to study and formulate recommendations, and to establish an annual Governor's TUR Awards Program to recognize outstanding individual and organizational achievement in TUR.

The Office of Toxics Use Reduction Assistance and Technology (OTA: Office of Technical Assistance: Section 7 of TURA:

Composition:
OTA is an agency within Environmental Affairs. Although officially created in July 1990, it's predecessor, the Office of Safe Waste Management, already had many years of experience in TUR, in particular with the jewelry and metal-plating industries concentrated in southeastern Massachusetts.

Function:
OTA is a non-regulatory office established to provide technical

assistance to toxics users to achieve TUR in compliance with the goals of the Act. OTA coordinates with the private sector and other agencies on initiatives related to toxics use reduction and waste prevention, provides outreach to small businesses, assists filers with reporting and planning requirements under TURA, and will be responsible for the development of criteria to prioritize assistance in response to any priority user segments identified by the Council.

The Toxics Use Reduction Institute (TURI): Section 6 of TURA

Composition:
TURI at the University of Massachusetts in Lowell is established as a multi-disciplinary research and education center. The Institute was established in 1990 within the College of Engineering.

Function:
TURI's activities revolve around three major missions: sponsoring and conducting research on innovative technologies for TUR; developing educational materials and programs on TUR for the public and businesses, including a curriculum for the training of Toxics Use Reduction Planners (TURPs), and providing technical support services to the other TURA agencies and consultative services to other state agencies; and preparing policy reports, including researching potential restrictions on the use of chemicals in the state. Rather than provide direct technical assistance to companies, a function left to the purview of OTA, the Institute is the source of technological information and research that will develop the technologies and practices that OTA will deliver to industries.

The **Science Advisory Committee established under Section 6 of the Act** to consult with TURI on issues including user segment regulations and proposed listing and delisting of reportable chemicals, has not yet been formed. In the summer and fall of 1994, the members of the Science Advisory Board were appointed by Governor Weld and had their first organizational meetings. The Board includes an impressive mix of individuals with expertise in TUR including three members nominated by Environmental Affairs, three by Economic Affairs, three by TURI, one nominated by Labor, and one nominated by Human Services.

The Department of Environmental Protection (DEP): Section 3 of TURA

Composition:
DEP is an existing regulatory agency within Environmental Affairs. A TURA Office was created within DEP to carry out the Act's specific reporting, planning, regulatory development and enforcement requirements pertinent to Large Quantity Toxics Users (LQTU's).

Function:
DEP under TURA was given two major responsibilities. First, DEP was mandated to incorporate a multi-media focus into its regulatory programs and to establish a bias towards toxics use reduction as a preferred means of protecting the environment. Second, DEP was charged with developing specific toxics use reduction reporting and planning regulations, and other measures that apply to TURA-regulated firms.

TURA PROGRAM PROGRESS

Since the enactment of the statute, the TURA Program has succeeded in establishing the foundation necessary to effectively promote toxics use reduction in the state. The Program is in place to provide the opportunity to substantially change the way both the regulators and the regulated community do business over the coming years. This change is crucial if toxics use reduction is to lead to significant environmental improvement and increased competitiveness of Massachusetts industry.

In spite of significant start-up problems which precluded agencies from staffing up and accessing the funds necessary to meet the aggressive implementation schedule anticipated in TURA, much success has been achieved. In fact, the Massachusetts Toxics Use Reduction Program is now recognized nationally and internationally as a leader in the promotion of TUR.

- The **Office of Technical Assistance** (OTA) has shown that the provision of technical assistance through a governmental agency can be an effective tool not only to improve the relationship between the regulated community and government, but also to demonstrate that environmental progress can be achieved without the sacrifice of economic progress. OTA's services have helped industries facing environmental requirements achieve substantial pollution reductions, benefitting both the industry and the environment.

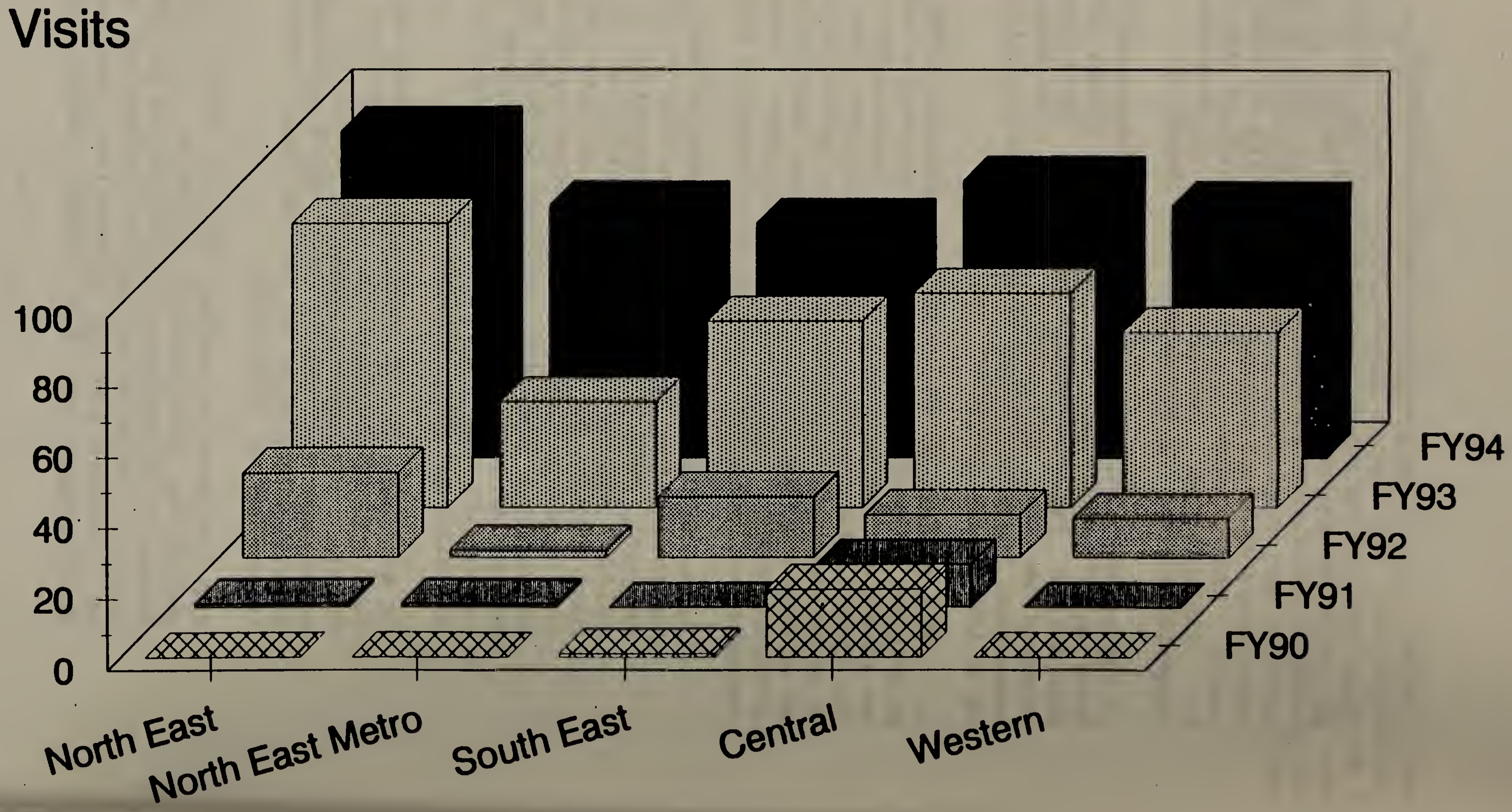
  In two federally funded OTA administered projects, the Central Massachusetts Pollution Prevention Project and the Merrimack Project, OTA assisted 78 companies in eliminating over 5 million pounds of pollution while at the same time realizing cost savings in excess of 3.6 million dollars. (These figures indicate the tremendous potential opportunities for toxics use reductions and cost savings through the provision of OTA's technical services, particularly given that this sampling of companies represents less than 20% of the over 400 firms serviced by OTA. (Figure 1.))

  In addition to the provision of direct technical assistance to over 400 Massachusetts firms, OTA has sponsored 150 public events, including industry specific, instate and regional workshops attracting over 4500 attendees. OTA staff have provided training to 500 federal, state and local inspectors in pollution prevention.

  OTA has been a leading advisor to EPA in the establishment of pollution prevention policies, in the identification of research priorities, in the set up of technology demonstration projects with Massachusetts companies, and in the development of specific EPA P2 initiatives such as the Design for the Environment and the Common Sense Initiative. With EPA

FIGURE 1

Site Visits by OTA
by Region FY90 - FY94



funding, OTA produced the "Practical Guide to Toxics Use Reduction " for distribution and use by the Northeast States. Working with the Massachusetts Division of Energy Resources, OTA secured one of 10 National Industrial Competitiveness through Energy, Environment and Economics (NICE3) program awards.

OTA nationally is an active participant in the National Roundtable of Pollution Prevention Programs and internationally, has consulted with representatives of a large number of foreign countries who are studying models for the delivery of similar technical services.

- The **Toxics Use Reduction Institute (TURI)** has documented significant success in meeting both its specific mandates and in shaping its educational, training and research activities to meet the needs of the TUR community. TURI staff have shown ingenuity and creativity in seeking out opportunities to research TUR technologies, to disseminate information to the industrial community, and to seek the constant advice of both industry and public interest groups to guide the development of their training and educational programs.

The Institute designed, established and delivered the first in the nation comprehensive professional training program for Toxics Use Reduction Planners. Over three years this widely recognized program has offered 22 courses and trained 548 professionals, many of whom went on to pass the state certifying exam.

The Institute set up one of the nations leading technology transfer centers on environmentally conscious technologies which today contains more than 10,000 books and documents and has serviced over 1500 information requests since its opening in 1991. Less than one year ago the Institute opened the Surface Cleaning Laboratory to provide laboratory services to Massachusetts firms.

The Institute was awarded several EPA Cooperative Agreements including a "Cooperative Agreement on Design for the Environment", "Solvent Substitution Cleaning Alternatives Project" and the "Garment Alternative Wet Cleaning Training Development Project". The EPA specifically asked the Institute to carry out contracted work in "Technology Transfer to Promote Alternative Chemical Technologies".

The Institute provided initial support and motivation for several new organizations including the Center for Environmentally Appropriate Materials, a multi-campus research center within the University of Massachusetts system, established without TURA Funds, and currently operating at $1.7 million per year; the new Pollution Prevention Consortium *of New England Universities which serves as a research and education coordinating forum for eleven universities; and the Microscale Chemistry Center at Merrimack College.*

The Institute has been recognized by the United Nations' Environment Programme as a leading international center for the promotion of cleaner production and appointed the Institute Director to the Cleaner Production Programme's Core Advisory Board. On average, the Institute hosts at least one visit per month by international visitors or delegations, including the Minister of the Environment of Ireland.

- The **Department of Environmental Protection (DEP)** has engaged in a major reorganization aimed at integrating a multi-media focus and toxics use reduction approach to all of its enforcement efforts. In addition, considerable efforts have been taken to develop the specific regulatory reporting and planning mandates under the statute. The Program Accomplishments section documents achievements towards changing the way DEP does business to make pollution prevention, rather than waste management, the focus of agency attention.

Multi-media inspections, unheard of in 1990, outnumbered traditional DEP inspections in 1993 by a total of 870 to 50. Facility-wide Inspections to Reduce Sources of Toxics (Waste Prevention FIRST Inspections) reached 709 regulated facilities in 1993, its first full year. To inspect those facilities in the conventional single media way, 2992 visits would have been required.

Nearly 19% of the Waste Prevention FIRST inspected facilities - 133 in all - were cited for a total of 161 unpermitted activities or unregistered waste streams. Enforcement followup to these inspections now routinely refers all violators to OTA for assistance, leading in 1993 to 38 OTA site visits.

DEP has developed an integrated database system (EPICS) providing statewide access to a single facility-wide database which was recognized in 1994 when it received one of ten awards from the ComputerWorld/Smithsonian Awards. EPICS allows the multi-media, pollution prevention effort to move from a broad objective to an implementable compliance and enforcement tool.

- The **TUR Advisory Board** has successfully organized the first Annual Governor's TUR Awards which was held in May of 1994. Six companies were recognized out of a very strong field of applicants, for their individual success stories proving that TUR is both good for the environment and sound business practice. These companies reduced toxics use, byproduct generation, and business expenses.

- **TURA data analysis** conducted by DEP and more fully discussed in this report on pages 34 and 35, indicates overall Program progress towards toxics use reduction.

  For the 450 companies that reported under TURA in 1990, 1991 and 1992, use dropped off by 5% in the first year and 9% in the second year. (Figure 2.)

  A comparison of 1991 and 1992 data indicates that more companies were applying TUR techniques in 1992 than in 1991. In 1991, data shows the largest number of companies had no change in byproduct reduction. The 92 data shows the largest number of companies reporting reductions in the amount of byproduct generated. (Figure 3.)

- **Plan Summary data** collected by DEP and more fully discussed in this report on page 35, indicates that the planning process which began this year may very well lead to substantial TUR in the near future.

  A DEP survey given to a statistically significant number of TURA filers who had submitted plan summaries in July 1994, indicated that nearly 80% of the companies found the planning exercise useful, 90% of the companies involved top management in their TUR planning process, and 92% actually planned to implement TUR strategies.

However, in spite of the TURA agency accomplishments and indications of progress in TUR as detailed in this report, the Program is facing a significant level of criticism. This criticism stems not only from a slow start-up, but from concerns relating to Program management and resource allocations. These concerns have also been exacerbated by a lack of clear, easily accessible data to document program success.

SLOW START-UP:

Although TURA set in motion a new creative approach to government funded through industry fees, the program experienced start-up problems typical of all new state initiatives. Unanimous legislative support did not insulate the Program from the personnel policies and spending plans governing the operations of all state agencies which were designed to affect budgetary and staff cutbacks. Start-up was slowed by delays in allocation of funds, by the existence of state hiring freezes, and by a significant lack of office space. Although July 1990 marked the beginning of the first fiscal year of the Program (FY 91), the difficult economic times for the state created obstacles to Program implementation, preventing the TURA agencies from becoming active until late 1990 and early 91. In fact, DEP, OTA, and TURI only reached full staffing in FY 1994.

FIGURE 2

COMPANIES REPORTING IN ANY ONE YEAR
VS.
COMPANIES REPORTING IN ALL THREE YEARS

(SARA Chemicals and SIC Codes 20 - 39)
(in millions of pounds)

	All Companies		Companies reporting 90-92	
Yr	Total Use	Byproduct	Total Use	Byproduct
90	1218	123	846	91
91	1359	150	806	91
92	1294	154	770	91

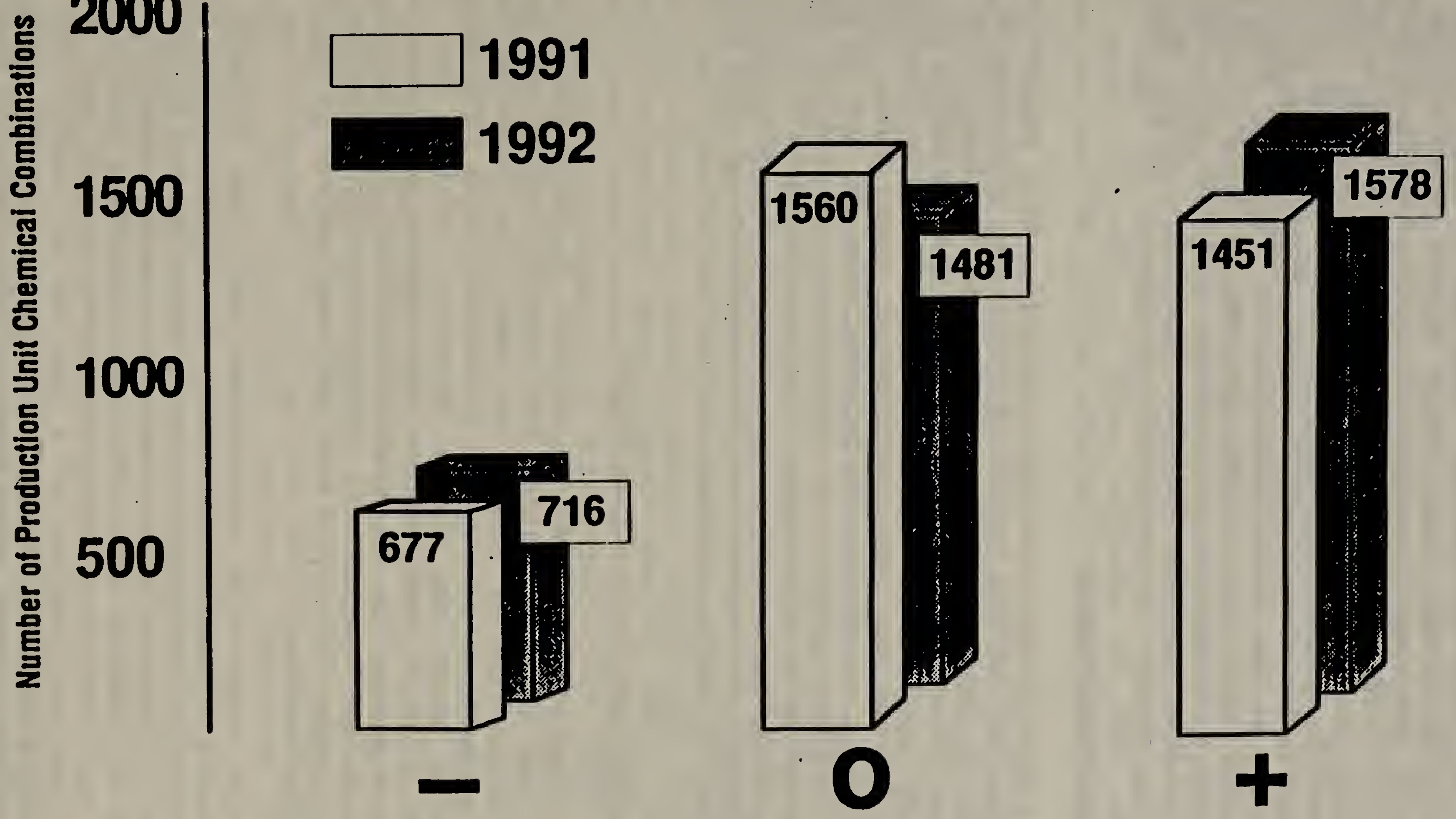
BYPRODUCT REDUCTION INDEX*
Comparison of 1991 and 1992

FIGURE 3

BYPRODUCT REDUCTION INDEX*

Comparison of 1991 and 1992

(Are companies producing less or more waste per unit of product?)



---

* A measure of efficiency expressed as a comparison of byproducts, adjusted for changes in production levels. A positive BRI means less waste per unit of product.

The inability of the TURA agencies to gain access to and expend TURA funds in the early years of the Program also created a fee surplus (more fully explained in the budget section) in the TURA Fund. This surplus of TURA fees has been identified by the legislature as an easily accessible source of funds for non-TURA related programs. In FY 94 and 95, a total of $3.125 million has been diverted from the TURA Fund. These raids have been viewed by industry as the imposition of a new "TURA tax" and have resulted in vehement criticism of the Program by industry and environmental constituents who see the raid as evidence of a lack of sufficient Legislative support for the Program. This criticism poses a serious threat to the continued support of the TURA Program.

PROGRAM MANAGEMENT:

The lack of Administrative Council staff dedicated to coordinate Program activities and to monitor the progress of TURA Agencies, proved detrimental to smooth Program implementation as interagency issues arose and concern grew over the inability of DEP to meet its objectives in a timely manner. In addition, the Council was given a number of key responsibilities under TURA, the completion of which were considered to be beneficial to industry. Many of these tasks remain undone. In particular, the failure of the Council to produce an accounting of the Program expenditures in an Annual Report has been a major area of concern. With the recent hiring of an Executive Director and the completion of this Annual Report, the Council is taking definitive action to fill its intended statutory role.

RESOURCE ALLOCATION DECISIONS:

The Council's ineffective efforts to coordinate the Program also resulted in very limited interagency review and public comment on the allocation of TURA funds among the three agencies as wells as DEP's resource allocation decisions which favored broad agency TUR efforts over the Large Quantity Toxics User (LQTU) Program development. Such review and comment may have led to a broader understanding of Program activities and perhaps even greater stakeholder support for decisions which resulted in the stalled development of many of the LQTU regulations in favor of multi-media reorganization.

At the time TURA was passed, DEP was already facing serious resource allocation problems. In addition to the many specific DEP mandates relating to the LQTU reporting and planning program, TURA also called for a new approach towards environmental enforcement with a focus on TUR. This new approach required a reorganization of the structure of all waste programs and the creation and institutionalization of a new way of conducting inspections and thinking about enforcement. This was a major undertaking then, and continues to be a major focus at DEP requiring much of the Agency's TURA resources.

Although faced with it's large number of specific statutory mandates (much larger than any other TURA component), it's relatively low funding allocations when compared with OTA and TURI, and the absence of any established models for the required regulations, guidelines and training documents, DEP made a strategic decision to invest a large portion of TURA monies to support internal restructuring. This internal restructuring supported TURA mandates to institutionalize toxics use reduction and to promote a multi-media compliance and enforcement approach. While these larger program issues (multi-media,TUR restructuring) were in fact appropriate TURA concerns and may arguably, in the long run, lead to significant toxics use reduction benefits, resources were focused on these efforts at the expense of allocations to the TURA Office necessary to meet LQTU mandates.

The lack of staff and money directly allocated to the DEP TURA Office has been responsible for the delays and failures to complete a number of specific TURA mandates. Progress towards these mandates was important to the early implementation of the Program, most significantly as an indicator to industry that the fees were being properly utilized to maintain the balance of interests negotiated in the statute. While the delays in meeting some of these requirements had little significant effect in the implementation of the Program, the many concrete statutory objectives were viewed by industry and public interest groups as important milestones to determine the level of public effort being expended. For this reason, DEP's resource allocations decisions, in conjunction with very limited public discussion on both those decisions and on progress made towards meeting TURA's broader TUR objectives, have contributed to the erosion of TURA's base of support. Maintaining support and confidence in the TURA Program is necessary for its success given that it relies so heavily on the voluntary actions of industry.

DATA ISSUES:

There is little good comparative data available to assess the success of the Program in reducing the use of toxics or generation of toxics wastes. Raw data can be misleading, and more detailed data is scarce. For example, raw data indicates that total chemical use increased by 6% from 1.22 billion lbs in 1990 to 1.29 billion lbs in 1992. Similarly byproduct increased 25% in this same period from 123 to 154 million lbs. However, this data is misleading since it does not take into consideration such critical factors as increased production and the addition of new reportable chemicals and industry sectors. As a result, a quick look at the raw data does not give a true reflection of whether or not process inefficiency has increased or decreased.

While more detailed analysis of TUR data by DEP (discussed on pages 34 and 35 of this report) indicates that Massachusetts companies are moving towards the implementation of TUR techniques, there is clearly a need for better comparative data, particularly relating to toxics use. As the list of TURA agency accomplishments detailed in this report shows, the TURA Program as envisioned under the statute is now in place. To determine the success of this Program in meeting all the statutory mandates, attention must now be focused on identifying appropriate measurements of TURA success and on data collection and analysis.

As criticism of the Program has arisen, access to improved data becomes more and more critical to the Program. Without additional funds to dedicate to data improvements, the Administrative Council will not have the data necessary to evaluate the Program, to focus the efforts of the TURA agencies, and to determine progress towards the statutory mandates.

SUMMARY:

The TURA Program is nationally and internationally recognized as a leader in the promotion of toxics use reduction. A close look at the Program clearly documents significant progress in developing the strong foundation needed for longterm TUR success. A more coordinated, aggressive management of the Program would have led to even greater progress, however it should be understood that many of the problems experienced by the Program are attributable to its position as a leader in efforts to comprehensively promote TUR. Massachusetts is way ahead of most, if not all other TUR efforts nationally and internationally. While the TURA Program has been the recipient of justifiable criticism here in Massachusetts due to weaknesses in Program implementation, it nevertheless is, and deserves to be, a national and international leader.

Recommendations detailed in the last section of this report will serve to address issues facing the Program which, is successfully adopted and carried out, will make the TURA Program a source of pride in the Commonwealth of Massachusetts for environmental activists and industry leaders alike.

TURA AGENCY ACTIVITIES AND ACCOMPLISHMENTS

The following sections outline the specific activities and accomplishments of the each of the five TURA agencies (OTA, TURI, DEP, the Advisory Board, and the Administrative Council) since enactment of the statute through FY 1994. Mandates not yet accomplished are identified and plans for addressing TURA Program objectives during FY 1995 are discussed.

For a quick summary, readers are referenced to Appendix A to this Report which presents a table of the TURA mandated action/deliverables, timetables, and dates when each action was achieved or is estimated for completion; and Attachments B, C, and D, the strategic plans for each of the TURA agencies.

OTA: THE OFFICE OF TECHNICAL ASSISTANCE

ORGANIZATION AND STAFFING:

In FY 1994, OTA reached full staffing levels with a total of 29 full time professionals - three of which are supported by an EPA grant- and three interns. (Figure 4. is a current organizational chart of OTA personnel.)

OTA staff includes highly skilled and dedicated scientists, engineers, environmental analysts and other professionals some of whom have doctorates, many with advanced degrees and years of industrial and/or environmental experience, and all of whom have demonstrated a commitment to the approach of prevention and the creativity that is necessary in order to effect TUR. Their expertise covers most branches of technology to allow OTA to provide high quality services to such diverse TURA industries as fiber optics, electronics, semiconductors, printed circuit board manufacturers, coating, tanning, furniture manufacturing, textiles(including non-woven), food processing, graphics, printing, and photoprocessing, laundry, dry cleaning, painting, and paint manufacturing, pharmaceuticals, plastics, paper manufacturing, soap and detergent manufacturing, chemical compounding, and others. OTA has even developed in-house resources to assist companies with the financial analysis of TUR projects and assistance with financing. A list of current OTA staff, detailing each individual's field of expertise, can be referenced in the following section of the report detailing TURA Fund expenditures.

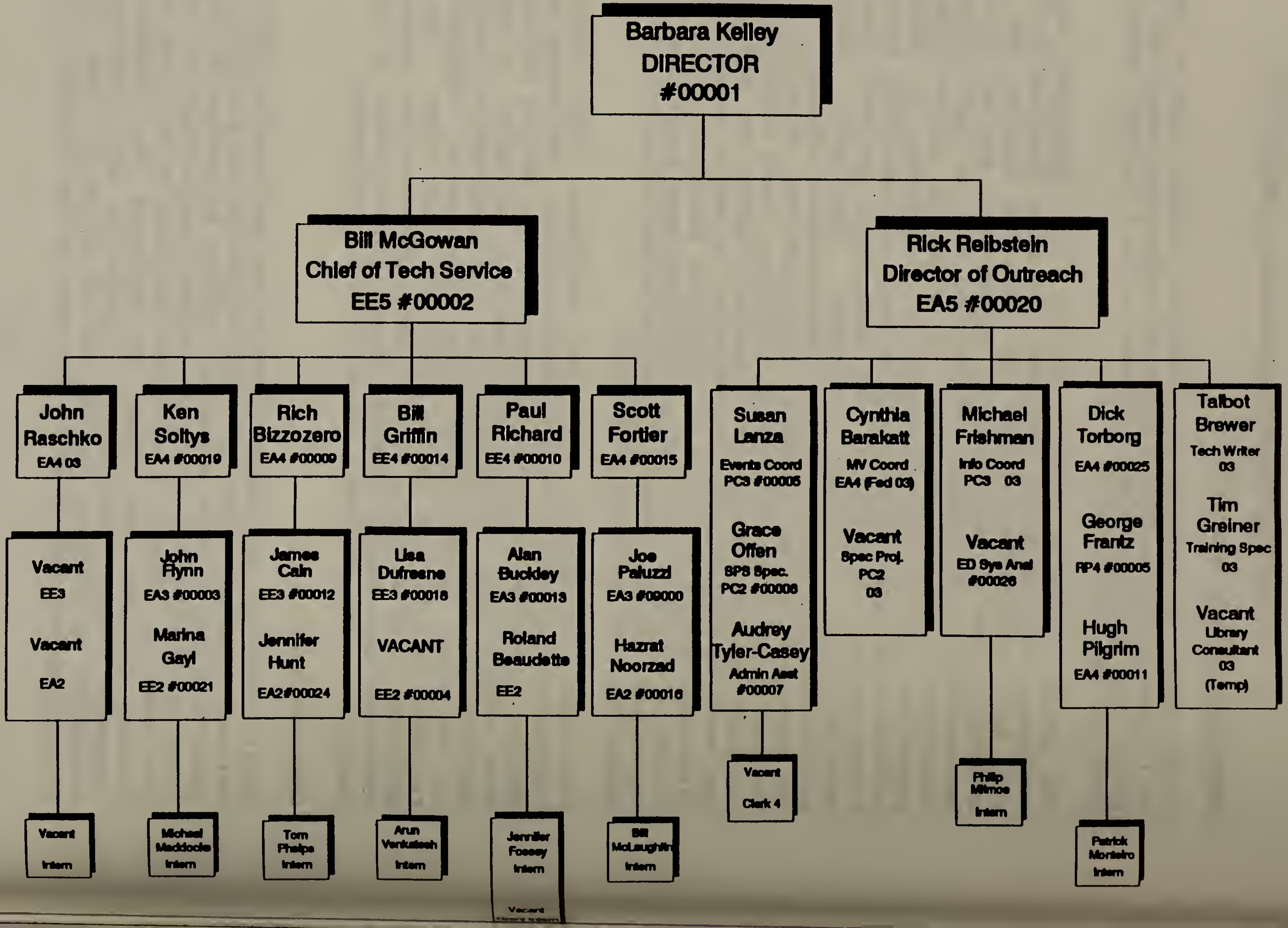
The Staff is divided into two sections: those whose primary responsibility is to perform onsite visits, and those who work on special programs or provide support to the entire office, such as data evaluation, events organization, outreach, or policy. The onsite visit staff is divided into five geographical regions to aid in building relationships with businesses, communities, DEP regional staff, and other people in each area. The regional approach is also useful for the administration and organization of technical assistance efforts. Each regional teams is subjected to quality control reviews and productivity standards.

OTA SERVICES:

OTA's technical assistance efforts are designed to educate as many relevant company employers and employees as possible about the opportunities to save money and reduce pollution at the facility level by finding and choosing the most cost-effective TUR options. The range of technical services provided by OTA are designed to produce results long after the services are rendered to lead companies beyond compliance. Companies are directed to focus attention on process change and to maintain that attention by instilling the TUR ethic at the core of the business' operations.

FIGURE 4

Office of Technical Assistance



OTA seeks to create a demand for TUR and to provide TUR services which will change the way companies look at their operation, so that pollution prevention will be ongoing and progress will be continuous.

OTA efforts to promote TUR:

- the sponsorship of more than 150 high visibility public events, including industry specific TUR workshops and conferences attracting over 4500 attendees;
- presentations by OTA staff at 150 related conferences, reaching an estimated audience of 7000;
- the publication of a TUR Manual and 23 TUR case studies to provide step by step guidance to all phases of TUR and to document reductions in toxics use and/or toxics by-product generation. Case studies of 16 companies where cost figures were available, documented total annual savings of $1.56 million with over 2 million pounds of VOC's eliminated;
- the provision of TUR training to more than 500 federal, state, and local inspectors;
- the establishment of strong working relationships with DEP, EPA, MWRA, other sewage treatment facilities, and other related enforcement personnel.
- the building of a file system containing a wealth of TUR information including established protocols for meeting, sharing, and reviewing information to continuously raise the level of knowledge of industry representatives and OTA staff to allow them to spot TUR opportunities wherever they may be.

OTA hands-on technical services:

- Over 750 on-site visits to 400 companies in the last four years. The five teams of three engineers in each region are continuously busy responding to requests from companies for help in avoiding pollution and in achieving compliance with environmental laws. Because TURA requires OTA to help all toxics users, OTA site visits include all sizes and types of companies, including some nonbusiness organizations and others, such as sewer treatment facilities, schools, government agencies, hospitals, and residents. The number of OTA site visits has steadily risen each fiscal year beginning in 1992, the first full year of operation. (Refer to Figure 1.)

- As the reputation of OTA's knowledge and experience has grown each year since 1990, so has the number of calls requesting OTA assistance. The office receives hundreds of calls each month from companies spanning the broad range of TURA filers.

- By 1993, OTA established active technical assistance programs in all regions of the state. The historic focus of OTA efforts in Central Massachusetts which resulted from an EPA funded project, was successfully broadened throughout the state. All five of OTA's regional programs have now established regional advisory committees composed of area business representatives, created cooperative links with regulatory inspectors, and begun offering workshops and seminars on technical and regulatory issues relating to pollution prevention. (Figure 5 shows OTA site visits by region for FY 93 and FY 94.)

In 1994 alone, 114 industrial facilities which had never before had contact with OTA, sought technical assistance. In addition, OTA visited 12 other facilities and 26 state facilities as part of the Governor Weld's Clean State Initiative. (Figure 6.)

- OTA also provided technical assistance to a wide range of local, state, federal, and international organizations and agencies in an effort to promote TUR initiatives and to create additional demand for and recognition of the benefits of TUR.

OTA financial services:

- OTA and the Northeast Waste Management Officials' Association (NEWMOA) received two grants from the Northeast Hazardous Substance Research Center (NHSRC) to look at the relationship between financial analysis and pollution prevention activities. Traditionally environmental costs had been buried in overhead rather than being attributed to the causative activity. The initial grant led to the publication of "Costing and Financial Analysis of Pollution Prevention Projects: A Training Packet" (1992) in which materials, case studies and exercises were developed to train state environmental personnel in total cost assessment of pollution prevention options for companies. The subsequent grant was used to develop a curriculum, based on the previous work, to assist plant personnel who are involved in pollution prevention to better assess possible projects and to present them to management in a manner which makes the projects competitive with other company priorities. This effort resulted in the publication of "Improving Your Competitive Position: Strategic and Financial Assessment of Pollution Prevention Projects"(1994). A series of workshops is planned to present the material to the business community.

- Following the completion of the above grant, OTA has continued to offer financial assistance to companies in assessing environmental costs and in evaluating the costs associated with TUR alternatives.

FIGURE 5

Site Visits

by Region 1993 - 1994

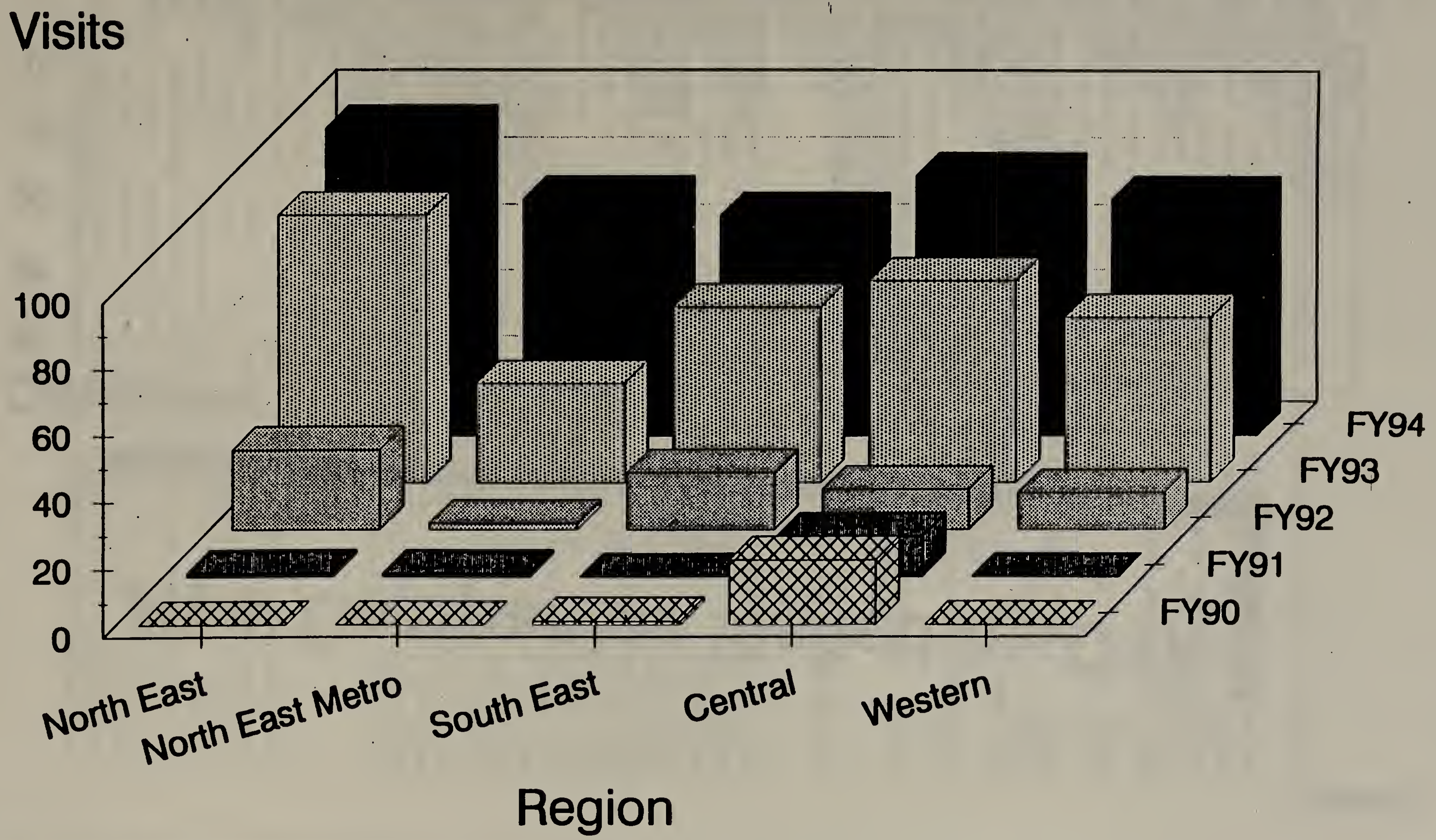
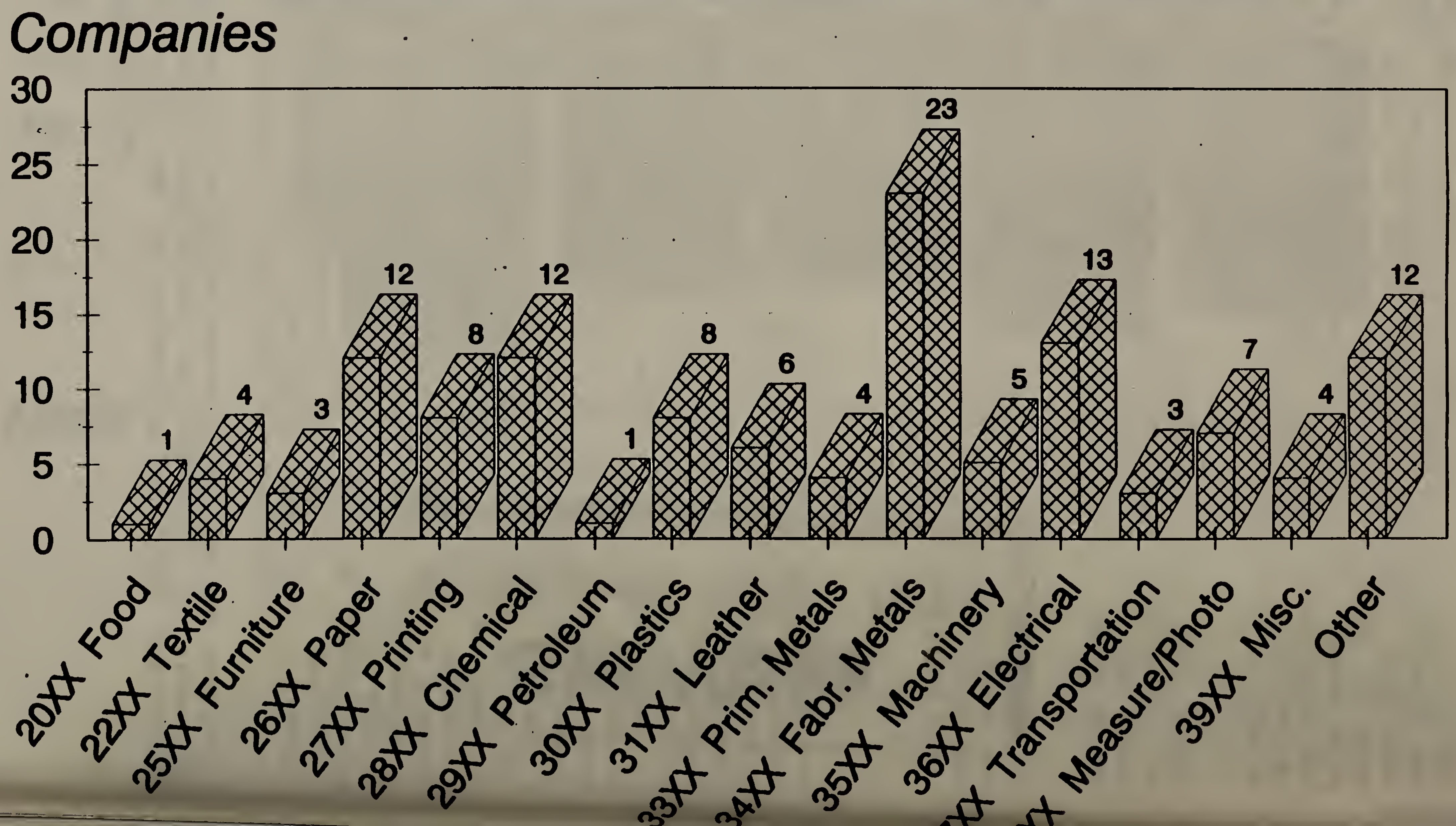


FIGURE 6

New Companies Visited by OTA

FY 94



OTA services to TURA filers:

- the provision of on-site technical assistance visits. (Figure 7.);
- industry specific workshops targeting SIC sectors, including Metal Finishing workshops which serviced 28% of the target group of TURA filers, Electronic Industry workshops servicing 12% of the target group of TURA filers, and Chemical, Plastics, Paper and Textile Industry workshops servicing 28% of the target group of TURA Filers;
- 36 public workshops with DEP and TURI on how to do TURA reporting and planning;
- OTA staff presentations at Planning Enhancement Project (PEP) workshops, a joint effort undertaken with TURI to ensure quality plans. Attendance at the workshops totalled 438 people representing 43% of the 1991 TURA filers;
- monthly planning clinics throughout each region assisting a total of 307 companies with plan preparation;
- mailings of planning assistance materials sent to all filers in May 1994.

OTA federally funded technical assistance projects in support of TUR activities:

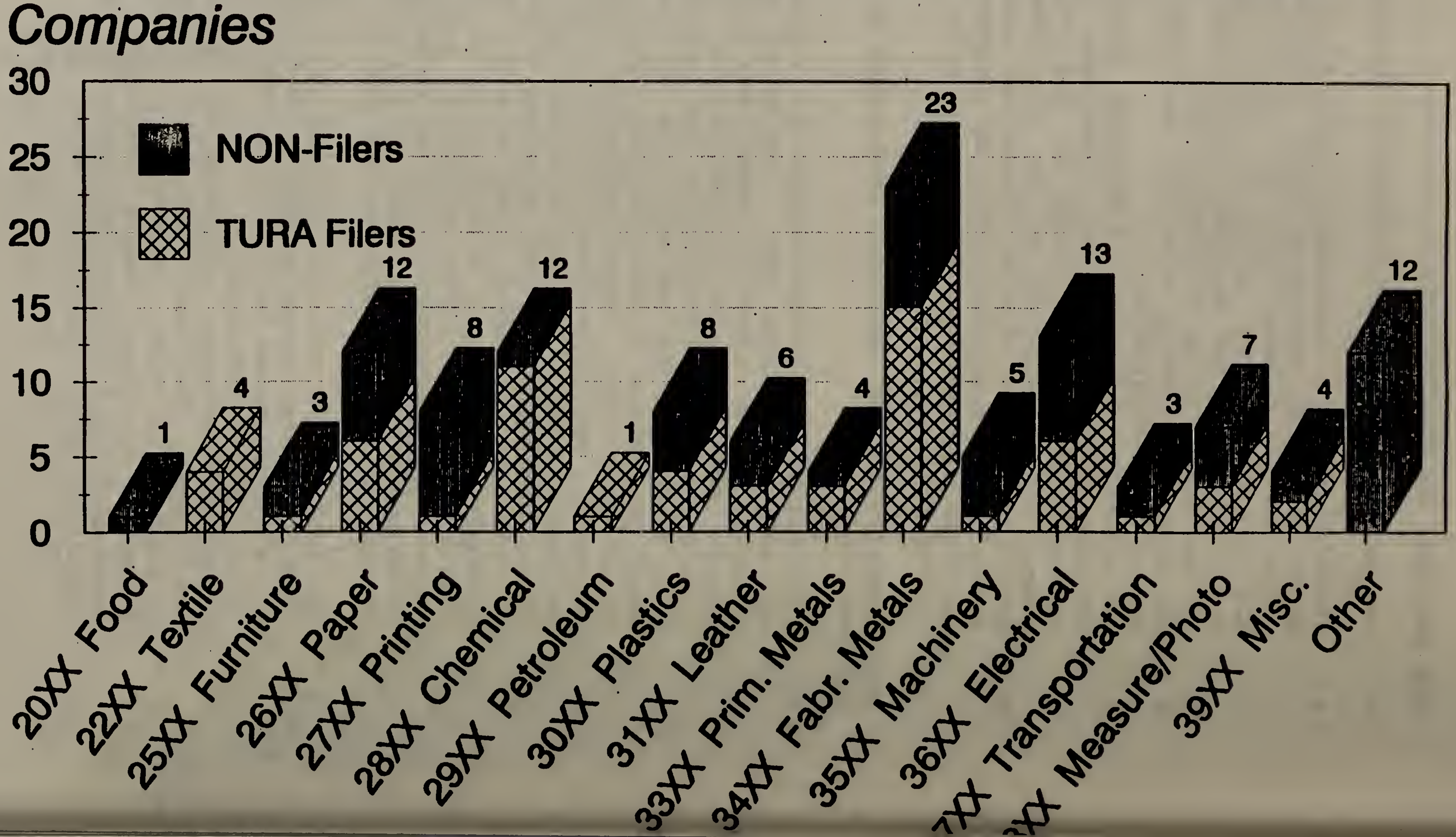
- EPA Critical Parameters Grant was a project funded from the end of 1991 through 1994. The grant was directed at POTWs experiencing or about to experience problems with exceeding permit levels for specific parameters. The project looked at cadmium problems prohibiting the marketing of compost made from sludge in Springfield, the influence of consumers and small businesses on the proposed water quality permit at the Upper Blackstone Water Pollution Abatement District in Worcester, and failed toxicity at the POTW in Warren which was believed to be caused by a single industrial source in the town. The Warren project produced a cost effective approach to reducing toxicity from single sources within small communities which is transferable to other communities and businesses. The other activities produced a video on how POTWs work, a consumers' guide on reducing toxic discharges to POTWs and a school curriculum and marketing materials that can be used by POTWs to educate the public.

- The current EPA Clean State Grant from EPA was awarded in late 1993 to augment Governor Weld's Executive Order 350 directing all state agencies to come into compliance with environmental laws and regulations and to prepare pollution prevention/resource conservation plans to guide future activities. The Clean State grant funds the establishment of a multimedia team, supervised by staff of the relevant agencies, to visit twenty five state facilities to assess opportunities for toxics use reduction, solid waste reduction, recycling and composting, water and energy conservation,

FIGURE 7

New Companies Visited by OTA

FY 94



indoor air quality and "green" procurement. The team will identify the most common TUR opportunities at a variety of facilities so the information can be used by similar facilities and serve as a basis for the training of Clean State Coordinators. The project will also identify policy or procedural changes necessary in order to institutionalize pollution prevention/resource conservation within state agencies.

- The Central Massachusetts Pollution Prevention Project (CMPPP), sometimes referred to as the Blackstone Project, was launched by the Office of Safe Waste Management in the fall of 1989 and completed by OTA in October 1992. The project which involved DEP, OTA and the Upper Blackstone Pollution Abatement District (POTW), won a Ford Foundation award for innovation in state government as the first attempt to coordinate technical pollution prevention services with regulatory inspections and compliance. An independent evaluation of the CMPPP showed:

    - 87 % of the firms that came to OTA workshops or received OTA visits implemented TUR;
    - Over half of the companies interviewed gave OTA credit for influencing them to make TUR changes;
    - 20 companies that received OTA assistance eliminated a documented 1.29 million pounds of pollutants;
    - Companies that documented savings averaged $35,000 per year.

- The Merrimack Project funded in October 1991 was designed to demonstrate that the preventive approach could be used to reduce loadings to sewage treatment facilities and to reduce direct discharges to waterways. Information gathered on OTA's work with 35 companies through the Merrimack Project showed:

    - 10 companies reported 1.72 million pounds of toxic chemicals eliminated;
    - 8 companies gave OTA credit for the reductions, totalling 717,000 pounds;
    - 18 companies documented savings attributable to OTA in excess of $1.1 million;
    - 65-91% of companies visited by OTA are doing TUR;
    - 66-89% of companies implemented TUR as a result of OTA's assistance.

OTA has succeeded in creating a considerable market for their services as evidenced by the constant influx of calls and requests for technical assistance which keep their five regional teams busy. Initial concerns over the ability of a state agency to provide technical assistance while working closely with enforcement agencies have proven to be unwarranted. Even the TURA filers, who are most likely to view OTA as a regulatory body, have sought OTA assistance at workshops and planning clinics. As evidence of the growing importance of OTA to the TURA regulated companies, in federal Toxics Release Inventory reporting, more LQTU's credited the state for helping them reduce toxic waste at the source, than did firms in any other state.

OTA is viewed as one of the premier programs in the world for pollution prevention technical assistance. OTA staff consult with several other states and countries who are attempting to replicate OTA's pioneering approach to pollution prevention technical assistance. Progress thus far indicates that as OTA continues to provide more and more quality service to Massachusetts industries, the TUR message will spread, leading to substantial reductions in the use of toxics and the generation of toxic byproducts.

OTA'S IMPACT ON TUR:

The above accomplishments of OTA reflect the successful delivery of technical assistance to a wide variety and large number of companies. On the basis of the 78 companies (less than 20% of the companies serviced by OTA) involved in the CCMP and Merrimack Project, it can reasonably be concluded that OTA has succeeded through these projects alone, in assisting companies to:

- eliminate over 5 million pounds of pollution
- and to realize cost savings in excess of $3.6 million.

The companies involved in these projects directly credited OTA for a high percentage of these TUR accomplishments.

These figures however, provide only a little more than anecdotal evidence to the business community of the impact of OTA services. Quantitative data on the actual economic savings and toxics use reductions attributable to OTA outreach efforts is limited. However, qualitative information is voluminous showing that companies are eagerly pursuing TUR. Even at this fairly early stage in OTA's efforts to assist companies in making fundamental changes in the way manufacturing is done, OTA monthly reports show that more than 1/2 of the companies working with OTA are implementing suggested TUR options.

As the implementation of TUR becomes entrenched in the manufacturing processes of companies assisted by OTA, the actual results of OTA's efforts will become easier to identify and quantify. For this reason the collection of standardized quantitative data on cost savings and reductions has emerged as an OTA priority. Although confidentiality is key to the provision of OTA's services, OTA recognizes and is focussing FY 95 efforts on the collection of more quantitative data from the industries serviced to measure TUR progress to date and to project future progress well beyond the 1997 statutory target date for Program evaluation.

OTA FY 95 PLAN:

The plan for OTA this coming fiscal year is incorporated as Attachment B. In addition to maintaining their outreach and technical assistance efforts, OTA will seek to gather more qualitative data to assess its services at the facility level, to assess the success of the TUR approach, and to determine progress towards TURA's goals and objectives. Integration of TUR efforts into other programs such as economic development and energy resources will be a focus of agency activity. While OTA assistance will be offered to all Massachusetts firms, OTA will focus attention on companies struggling with the new Clean Air Act (CAA).

TOXICS USE REDUCTION INSTITUTE (TURI)

ORGANIZATION AND STAFFING:

Although the Institute was initially funded in September of 1990, calendar year 1991 marked the first full year of program operation. Much of that year was devoted to planning, staffing, program initiation and early piloting of research and training. The Institute core staff reached full operating level in 1992 and the facilities were expanded to their existing size. To carry out its mission as a research, educational and technical support center, TURI is administered by a Director and three Associate Directors. The Director and the Associate Director for Research are employed by the University of Massachusetts. In addition, TURI currently employs a core staff consisting of 11 full time permanent, 6 full time temporary, and 2 part time employees. TURI also hires temporary staff of short duration, to execute certain of its projects as needed. Temporary staff include University Research Fellows, University Student Assistants, Temporary Clerical/Administrative Staff, and Special Project Staff. Lists of core staff and consultants working at the Institute each year, from FY 91 through 94, are provided in the Financial section of this report.

Figure 8 is an organizational chart reflecting the current structure of TURI. The Institute has been organized into four staff clusters: research; education and training; technical support; and administration. To maintain its focus and to receive input on the program initiatives, TURI staff has organized two advisory groups, one representing industry and one representing public interest groups. TURI works in close collaboration with both OTA and DEP to promote toxics use reduction.

TURI SERVICES:

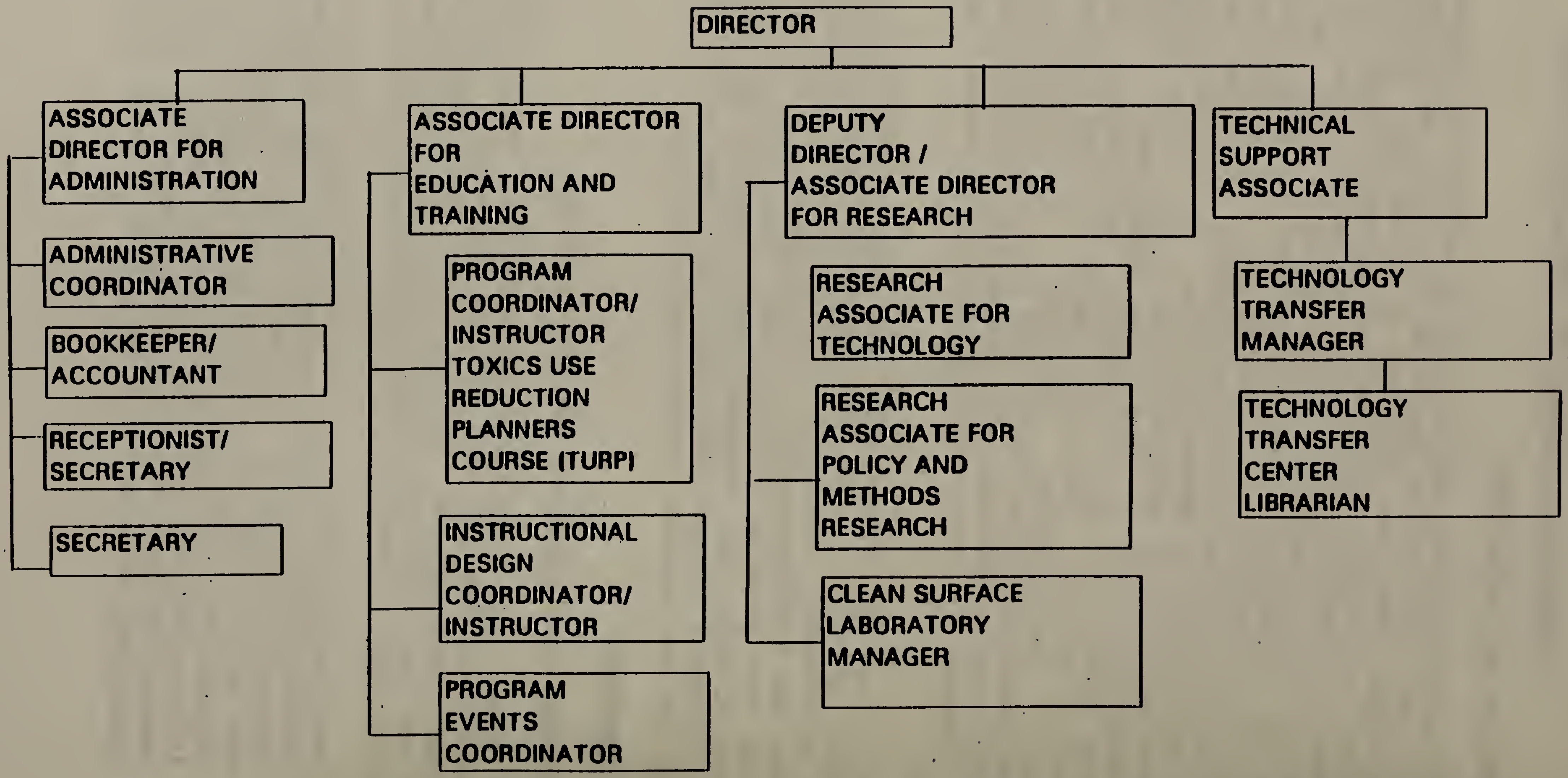
Educational and Training Accomplishments:

Under TURA, the Institute was required to perform a number of critical training and educational functions. TURI completed its mandated functions on time and even went beyond requirements to reach out to municipal groups, teachers and others in hopes of promoting TUR. Specific TURI activities in this cluster include:

- Developing, piloting, and conducting a fully original, first in the nation, curriculum and training session for Toxics Use Reduction Planners. Classes were held throughout the state and involved professionals selected from private companies, consulting firms and government agencies. All classes were fully enrolled, with a total enrollment of 566.
- Assisting DEP with the development of curriculum and the presentation of a training manual for the DEP's new Facility-

FIGURE 8

TOXICS USE REDUCTION INSTITUTE
UNIVERSITY OF MASSACHUSETTS LOWELL
ORGANIZATIONAL CHART *


DIRECTOR
ASSOCIATE DIRECTOR FOR ADMINISTRATION
ADMINISTRATIVE COORDINATOR
BOOKKEEPER/ ACCOUNTANT
RECEPTIONIST/ SECRETARY
SECRETARY
ASSOCIATE DIRECTOR FOR EDUCATION AND TRAINING
PROGRAM COORDINATOR/ INSTRUCTOR TOXICS USE REDUCTION PLANNERS COURSE (TURP)
INSTRUCTIONAL DESIGN COORDINATOR/ INSTRUCTOR
PROGRAM EVENTS COORDINATOR
DEPUTY DIRECTOR / ASSOCIATE DIRECTOR FOR RESEARCH
RESEARCH ASSOCIATE FOR TECHNOLOGY
RESEARCH ASSOCIATE FOR POLICY AND METHODS RESEARCH
CLEAN SURFACE LABORATORY MANAGER
TECHNICAL SUPPORT ASSOCIATE
TECHNOLOGY TRANSFER MANAGER
TECHNOLOGY TRANSFER CENTER LIBRARIAN

wide Inspections to Reduce Sources of Toxics (FIRST) training program.

- Assisting DEP and OTA in preparing and presenting "reporting workshops" for TURA Filers.
- Assisting DEP and OTA in conducting a seminar for state regulatory inspectors entitled "Train-the-Trainer".
- Presenting a one day conference with the Massachusetts Public Health Association for local Boards of Health and others interested in working with industry on TUR. Attendance for the conference reached 90 people.
- Organizing and presenting a one day conference on Design for the Environment in the summer of 1992, attended by Mass industries, national and local leaders interested in integration of environmental values into the first steps of production.
- Hosting the fall 1992 meeting of the National Roundtable of State Pollution Prevention Programs in conjunction with OTA and DEP. The meeting was attended by 220 state, federal, and business professionals from around the country.
- Providing two workshops training high school science teachers on TUR, sponsored by the National Science Foundation in conjunction with the staff of the Tsongas Industrial History Center.
- Preparing a draft curriculum for middle school students on the production, use and disposal of paper in conjunction with the Massachusetts Corporation for Educational Television. The curriculum was presented through an interactive television program.
- Organizing and preparing a course on TUR in the School of Engineering in Lowell. The course was offered for three semesters beginning in the fall of 1991.
- Organization and participation in a number of EPA conferences and training sessions, as well as speaking engagements at over 30 related events each year.

Research Accomplishments:

For a full discussion of the research activities at the Institute, readers are referenced to a TURI report entitled "Summary of TURI Research Work", dated January 1994. Technical research at TURI has focused on the technical feasibility of specific TUR technologies, processes, and chemistries and the development of new materials and processes which reduce the use of toxic chemicals. The Institute has performed in-house research as well as sponsored research programs and projects. Research efforts include:

- Publication of the "Toxics Use Reduction Research Directory" identifying over 100 programs across the U.S. and abroad that conduct pollution prevention research.
- Establishment of a Research Fellows Program in FY 91 and the awarding of grants to 18 applicants from FY 92 through FY 94. Projects involve research work on technical, methods or policy

relevant to TUR. Project reports are available from 1992 and 1993.

- Establishment of a Matching Grants Program in 1992 to encourage the testing of new TUR techniques in Massachusetts companies and the awarding of 5 dollar for dollar matching grants in FY 93 and nine grants in FY 94, totaling $65,000 and $80,000 respectively. Two of the project reports are currently available.
- The start-up of a University based Surface Cleaning Performance Testing Laboratory where firms can try out new surface cleaning chemicals and technologies. The Laboratory was based on an idea by the Industry advisory group and currently offers research and testing opportunities to Massachusetts industries to evaluate the effectiveness of different aqueous-based cleaning chemistries and equipment on a variety of substrates and soils.
- Assistance in the establishment of the Center for Environmentally Appropriate Materials, a University-wide research center initially focusing on polymer materials.
- Completion of the TURA mandated report on "further chemical restrictions policies" in time to meet the statutory deadline of January 1, 1993.
- Funding of the development and use of microscale chemistry procedures to promote the reduction of toxic chemical use and byproduct generation in educational laboratories.
- Three TUR substitution studies have been conducted to develop methodologies for identifying safer alternatives to toxic chemicals. The first two studies are available.
- Development of a methodology known as total cost analysis for identifying the quantitative and qualitative costs associated with using a chemical, product or process. TURI is completing a report of five case studies.
- TURI is leading the efforts of the TURA Program in measuring TUR progress in Massachusetts. An internal TURA group has been formed with membership from each component to begin to identify and assess qualitative and quantitative data.
- The Clean Alternatives Project is an EPA funded initiative carried out by TURI to evaluate the technical and economic feasibility and environmental and occupational safety of alternatives to "33/50" solvents used in metal degreasing operations.

Technical Support:

- The Institute in response to the industry advisory group, set up a Technology Transfer Center in 1992 to identify and disseminate information on new technologies and materials that can be used to achieve TUR. The Center currently has an active library, technical file, CD-ROM technology and on-line data-base search capacity. A special pilot project involving 40 firms in a technical papers subscription service targeted the metal finishing industry.

- An Industry Focus Group Program was launched to ensure that the Institute addresses the needs of Massachusetts firms. The groups are made up of 8-12 representatives of particular industry sectors out of which solid research ideas have arisen.
- The Institute under a special EPA grant participated in the EPA's "Design for the Environment Project" on the Commercial Printing Industry.
- Under another grant program. TURI worked with the EPA to design training programs for Massachusetts commercial dry-cleaning professionals.

Administrative:

- The Institute has published and disseminated a newsletter for the TURA Program twice yearly.

TURI'S IMPACT ON TUR:

The Institute to date has accomplished all of its goals and objectives as specified under TURA. In addition, TURI staff has shown ingenuity and creativity in seeking out opportunities to research TUR technologies, to disseminate information to the industrial community, and to seek the constant advise of both industry and public interest representatives.

It is too soon to estimate the success of TURI's efforts to promote TUR and, even in the future, this evaluation will not be a simplistic task. However, TURI in the past two years has been actively seeking the input from Massachusetts industry to provide a focus and direction to maximize their research efforts. These efforts have served to address concerns expressed by TURA filers relative to the usefulness of the Institute's research to the LQTU industry sector. TURI has now established a strong working relationship with a variety of industry sectors, public entities and public interest groups. This ability to get sound input from a variety of interests is necessary to ensure that the work of the Institute is not only good quality, but useful to all those using, affected by, or concerned with toxics chemicals.

TURI FY 95 PLAN:

The strategic plan for FY 95, prepared by the Institute is incorporated as Attachment C. This plan details not only the specific goals and objectives of the Institute, but it specifies definitive outputs which carefully detail planned accomplishments in all clusters. One major undertaking planned by the Institute in FY 95 is to evaluate the TURP training curriculum and training manual utilizing industry input and an assessment of the quality of the TUR plans submitted. TURI will also be submitting to the Administrative Council another report on "further chemical restriction" prior to the January 1995 deadline.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

ORGANIZATION AND STAFFING:

The Department of Environmental Protection was an existing regulatory agency within the Executive Office of Environmental Affairs. The TURA Program Office was created in 1990 within the Bureau of Waste Prevention to develop the infrastructure for the regulation and enforcement of Large Quantity Toxics Users under TURA. In January 1991, DEP filled the first TURA funded positions in the TURA Program Office: three full time employees consisting of a director, a regional planner and an environmental analyst. The TURA Office currently is staffed by a total of seven people with the addition of two regional planners, a planning assistant and legal support.

Figure 9. is an organizational chart showing the current structure of DEP. This chart reflects the major reorganization of DEP which occurred in 1993 when the Office of Program Integration (OPI) was created. OPI was established as a result of the change in focus of DEP from single media to multi-media compliance and enforcement, which began under TURA mandate. This office is responsible for coordinating compliance and enforcement, permitting, regulation development, training, reporting, program planning and non-facility programs across all divisions. In addition, OPI is charged with ensuring that a TUR bias is built into all of DEP's regulatory programs, one of TURA's critical mandates.

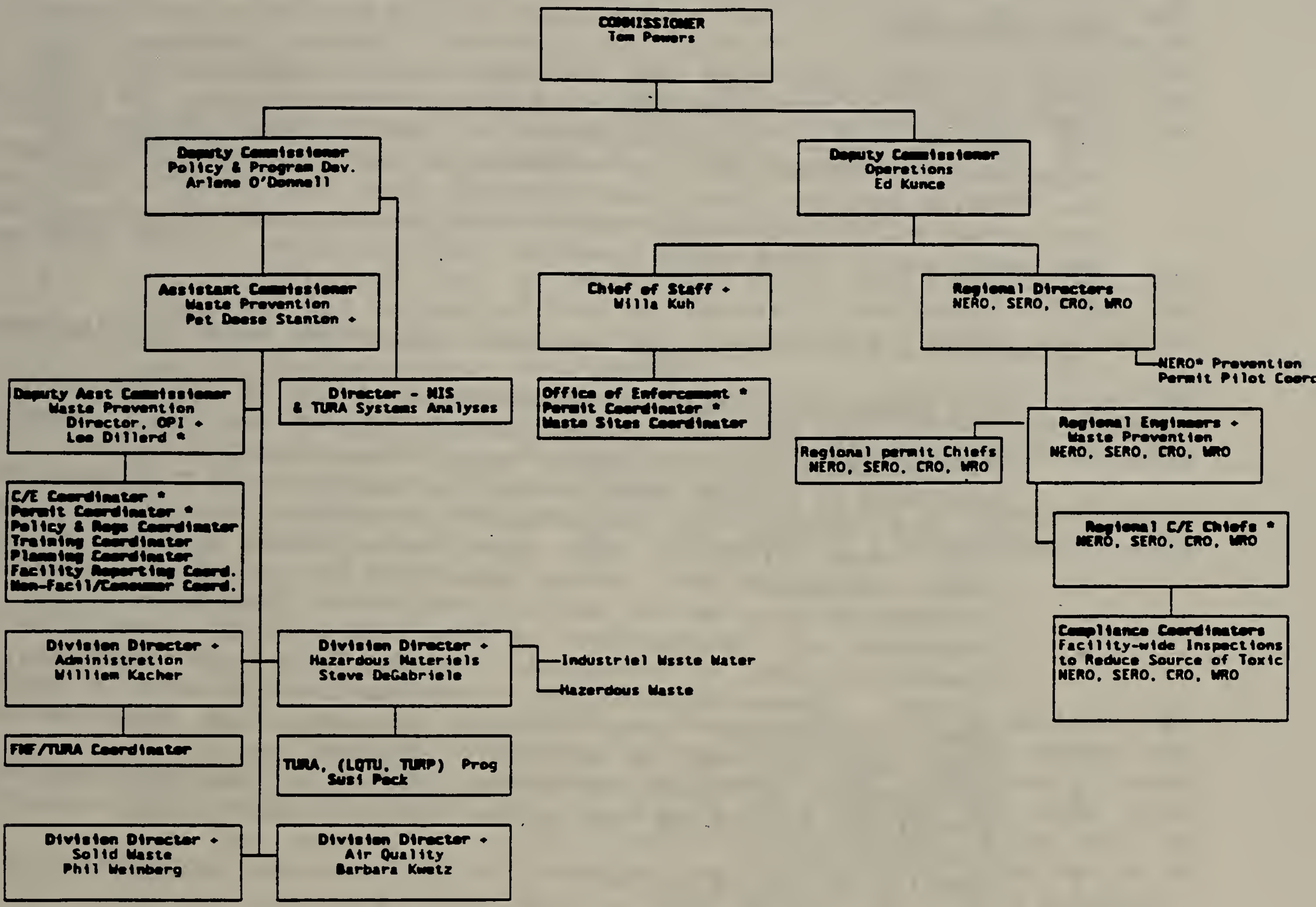
As a result of the broad TUR objectives and subsequent DEP reorganization, TURA funds have not only supported the staffing of the TURA Office, but a number of other related DEP positions which play important roles in the implementation of the Act. A complete list of 19 TURA funded positions, the job descriptions, and the names of individual DEP employees can be found in the Financial section of this report. The 19 TURA funded positions include: seven TURA Office personnel, 5 regional TURA Program experts who support the multi-media inspection program (FIRST); and seven individuals responsible for the TURA mandate to make TUR the preferred mechanism for achieving compliance with all environmental protection laws and regulations for which DEP is responsible. The list also identifies additional administrative, OPI staff and FIRST inspectors who play a significant role in the realization of DEP's multi-media focus and pollution prevention approach in all enforcement efforts, but whose positions are not funded through TURA fees.

As was true of OTA and TURI, DEP also had start-up staffing problems. Although TURA was signed into law on July 24, 1989, the first TURA funded positions at DEP became available and were able to be filled in early 1991. In the interim, DEP used other funds to support two TURA Office staff and one individual to work on TURA mandates applicable to DEP as a whole. In calendar year 1994, the

FIGURE 9

THE TOXICS USE REDUCTION PROGRAM AT THE DEPARTMENT OF ENVIRONMENTAL PROTECTION

Organizational Chart



D.L.
11/02/94
nv2.dwg P

* monthly meetings & regular communication
+ monthly meeting & communication

DEP TURA Office achieved its current level of staffing. Due to the limited staffing compared to the tasks to be accomplished, particularly in the first two years of the Program, many mandates were not accomplished on time and many are still left to be done. Readers are reminded to refer to the chart of TURA mandates included as Attachment A.

DEP SERVICES:

TURA called upon DEP to develop the infrastructure for and implement the LQTU reporting and planning mandates. In addition, DEP was mandated to incorporate a multi-media focus into its regulatory programs and to establish a bias towards TUR. Much of the TURA resources have been devoted thus far towards developing the broad multi-media approach to compliance and enforcement which was seen as a first step towards the promotion of TUR throughout DEP.

DEP efforts to develop and implement the LQTU mandates include:

- The preparation and distribution of a toxics use survey in the Spring of 1990 to some 60,000 firms in TURA regulated industries with a response rate of approximately 50%.
- Analysis of survey results and presentation of recommendations to the Council for adjustments of TURA fees in the Summer 1990, due 10/1/90. The findings of this survey indicated fewer companies fell under TURA than anticipated, requiring a recommendation to the Council to raise TURA fees.
- Issuance of guidelines in the Winter of 1990 for the classification of production units into user segments, due 1/1/90. These regulations assisted TURA filers in dividing their production into discrete processes as required under TURA reporting and to effectively plan.
- Development of forms for annual TUR reporting and regulations governing reporting and trade secrets in May 1991 which were due on 1/1/91.
- Specification of criteria for TUR plans and summaries in May, 1992 due 1/1/91.
- Promulgation of TUR Planner certification regulations in May 1993 which were due 1/1/91. Delays in the completion of these regulations caused significant concern over the preparation of training manuals and the development of TUR training curriculum by TURI. To ensure adequate time to train TURP's, in the fall of 1991 DEP worked with TURI, to begin training sessions before these regulations were completed.
- Offered TURP exam beginning in Spring of 1993. A total of 201 Limited Practice TURP's and 101 General Practice TURP's were certified. Inspections of the 1994 TUR plans are currently on-going.
- Compilation of an annual report on TUR progress was first completed in the Fall of 93.

DEP was obliged to develop all the above regulations and guidelines for the TURA Program without benefit of similar regulations in other states. Just as DEP was having difficulty with the implementation of a new Program, so was the regulated community. In recognition of this, industry representatives worked closely with DEP who sought as much public input into their regulatory development process as possible, utilizing a TURA Advisory Committee comprised of individuals from the regulated community and environmental groups. In addition, prior to full implementation of the regulations, DEP made use of "dry runs" to identify confusions with planning, and industry became active participants in the implementation process by proposing reporting formats, drafting reporting forms, and suggesting regulatory language.

Additional DEP efforts to assist LQTU's include:

- In the spring of 1991, a few months after staff was hired, DEP developed and conducted four workshops in conjunction with OTA and TURI to assist firms with reporting. These workshops reached approximately 400 people.
- In the fall of 1991 workshops were held to alert filers to the addition of CERCLA chemicals to the TUR substance list. Since that time, reporting workshops have been annual efforts with five offered in 1992 and six in 1993.
- Each year between 600-700 firms file reports on anywhere from one to twenty chemicals. The following is a breakdown of TURA filers by filing year:

  1991: 648 Firms
  1992: 681 Firms
  1993: 660 Firms
  1994: 566 Firms

  The low number of 1994 filers is in part attributable to 23 companies who have claimed exemption from filing under the policy for certain metalworking operations discussed in more detail below. Followup currently in progress may show that the low number of 1994 filers reflects the drop out of industries who have successfully utilized TUR strategies to go below reporting thresholds, a true reflection of TUR success.
- There have been consistent difficulties with the reporting data each year, prompting DEP action. In 1991, 80% of the firms reporting had some apparent problems. Most of these data problems were attributable to companies' inexperience with the new data elements found in the reporting forms, in particular, the federal Form R. Followup has been extensive and time consuming. Conservatively speaking, in 1991 alone reporting problems led to the mailing of letters to nearly 500 companies and 500 phone calls were made. Based on this first year of reporting, OTA, TURI and DEP worked together to revise the reporting forms with input from the DEP Advisory Committee. However, again in 1992, 80% of the reports required followup, prompting additional revisions in consultation with OTA and TURI to make the forms easier to

fill out correctly.

- Development of a new policy for certain metalworking operations in the last quarter of 1994. This policy provided for a reduction in TURA reporting requirements and an exemption from planning and fees for a limited class of metals including copper and its alloys, steels and stainless steels. The policy applies only to those facilities where the metal remains solid, where an aggressive scrap metal recycling process is in place, and where there are no reportable releases other than recycled products. This policy answered the concerns of a number of metalworking facilities and as of July 1994, 23 firms have claimed relief under this policy.
- DEP instituted an Amnesty Program to entice companies who should have been filing under TURA, to voluntarily come forward. As a result of the low number of people in the TURA Office, DEP has done only a minimal amount of followup to check on the questionable filing status of a number of companies likely to be in compliance, i.e. those who filed one year and not the next, those who filed under the federal TRI program and not under TURA; or those companies who have simply never filed and should have. Although DEP is now aggressively pursuing followup on these potential non-filers as detailed below, an Amnesty period was offered to try to seek better compliance with TURA in a less aggressive manner. As of October 1994, 47 companies have come in under Amnesty, paying over $510,629 in fees.
- In July 1994, DEP finalized an aggressive compliance and enforcement plan to identify all companies suspected of being in non-compliance with reporting requirements, to inspect a statistically significant number of facilities to review the quality of the TUR plans, and to ensure that TURA requirements are a vital component of all FIRST inspections at LQTU's. The plan blitz involved DEP on-site inspections at 59 firms. Of those 59 companies, only 15% of the plans reviewed warranted enforcement action followup, and half of those actions were in response to minor violations. As of October 1994, 566 companies have filed. Of those 566 companies, 90% have also submitted plan summaries, excluding 53 companies which have requested filing extensions and 23 companies which have sought relief from the planning requirements under the metals policy described above.

DEP's organizational efforts to promote TUR include:

- Operation of a pilot project with OTA called the Blackstone Project. The Program, launched in 1988, was a first of its kind in pioneering the concept of multi-media inspections. In 1991 the project was honored by the Ford Foundation and Harvard's John F. Kennedy School of Government for its efforts to encourage TUR. The award allowed DEP to obtain EPA funding necessary to complete the project and provide strong evidence of the efficacy and economic advantages of the multi-media approach to inspections.

- The Waste Prevention FIRST program began in 1991 to pilot test the inspection of facilities in a new way, prompted by the success of the Blackstone Project. By 1993, FIRST became a statewide initiative and provides TURA with one of its most potentially effective implementation tools. FIRST inspections are one-time, comprehensive assessments of each facility's overall environmental performance rather than the conventional single media approach. By conducting multi-media inspections where a team of inspectors simultaneously look at air quality, hazardous waste, and industrial wastewater, and then point companies in the direction of toxics use reduction; DEP can visit more facilities in less time, assess their overall performance in a way that eliminates the cross media transfer of risks, and does it in a way that is less onerous to the regulated community.

  The FIRST program has enabled DEP to visit more regulated facilities in less time, assess their overall environmental performance, and assist them in correcting existing violations without creating new types of environmental problems. As a result of the success of the FIRST inspections, DEP has quickly phased out traditional inspections in favor of the multi-media team approach. In FY 91, 60 FIRST were piloted. In FY 92, 750 traditional inspections were conducted as opposed to 150 FIRST inspections. By FY 93, the first full year of program implementation, FIRST inspections outnumbered traditional inspections 750 to 150, including 170 FIRST inspections at LQTU's. To inspect those facilities in the conventional single media way, more than 2992 visits would have been required.

  Nearly 19% of the FIRST inspected facilities were cited for a total of 161 unpermitted activities and unregistered waste streams. Each and every enforcement action resulting from a FIRST inspection refers violators to OTA for recommendations on opportunities for TUR. During FY 93, OTA visited 38 facilities as a result of DEP referrals.
- The Prevention Permitting Pilot Project (P4) has been ongoing under the direction of OPI staff, to identify and evaluate changes to the permitting process that will lead firms to use prevention techniques rather than treatment to comply with pollution control requirements. This project is partially funded by an EPA grant and has completed the first two phases of activity: in the Fall of 93 current permitting requirements were reviewed to identify P2 barriers and an industry survey was completed; and in 94, actual changes to the permit review procedures were designed. The third phase of the project which began last spring, is to utilize new procedures to process permits.
- Activities of OPI staff are focusing on the development and application of alternative enforcement policies, including

penalty mitigation through TUR implementation.

- An integrated environmental database to store a wealth of information to provide a comprehensive picture of the Massachusetts environment was designed and developed by DEP. EPICS (Environmental Protection Integrated Computer System) was developed as a result of the FIRST initiative where there was now a need to integrate the multiple, isolated databases for programs protecting air, water, and land within a single, facility-based system accessible statewide. EPICS has received the 1994 Computerworld Smithsonian Awards Program, the technology industry's top honor. EPICS has allowed the multi-media inspection program to function effectively, meeting a critical mandate in TURA. While the Facility Master File (FMF) which links all of DEP's program-specific databases together already connects all of DEP, EOEA, and OTA, additional work is being done to connect with the Attorney General's Office, POTW's, and other state agencies as TURA requires.

  FMF not only provides the data necessary for the FIRST inspections to allow the multi-media approach so critical to TUR effort mandated under TURA, FMF also has a section specifically designed to enter and provide specific reports analyzing TURA data. While the need for accurate and accessible TURA data is indisputable, the amount of TURA funds spent on the development of the FMF system have raised the concern of industry and public interest groups. (Refer to the budget section for details on expenditures.)

  Criticism of FMF expenditures result from two major factors: first, DEP has expended large amounts of money on FMF at the expense of other mandated, less complex, more visible TURA work; second, the TURA database is part of the large complex FMF system and therefore was subject to significant delays in data releases while awaiting the full operation of FMF. Even after the FMF was operable, DEP took nine months to produce an analysis of 1992 data. In addition, the quality of TURA data has been questioned in terms of the limitations of the analysis and the usefulness of data that is downloaded from the FMF system. Expensive, time consuming manipulation is necessary before the data is able to be aggregated into a useful format. As a consequence, public access to data is slow and limited and the data necessary to assess progress on the goals of the Act remains an elusive goal.

DEP mandates not yet accomplished:

As the above list clearly shows, the limited staff of the TURA Office has accomplished many of the specific statutory mandates relating to Large Quantity Toxics Users. DEP has undergone extensive efforts to change the way it does business. These efforts have already proven to be both a sound environmental protection strategy and a welcome change from the perspective of business.

However, the reorganization of DEP from a single media to a multi-media focus took up a large amount of TURA resources. Necessary internal restructuring of the individual media programs required among other things, the cross training of personnel; the development of new inspection, compliance and enforcement protocols, and the research, development and start-up of new integrated data systems. Although DEP saw this refocus towards multi-media as the first step toward promoting TUR throughout the agency, many have questioned the low staffing levels at the TURA Office which resulted in less than adequate resources to carry out the specific TURA planning and reporting requirements. This lack of LQTU resources has contributed to DEP's failure to meet the timelines and to complete all of the tasks specified in the statute. Consequently, these decisions have raised concerns over DEP's commitment to the LQTU mandates.

While it can be reasonably argued that some of the timetables in the statute were unrealistic and DEP's failure to promulgate all the required regulations in the specified timetables was inevitable, the resource allocations among the TURA agencies and within DEP virtually assured DEP's mixed TURA success. For this reason, it is important that DEP now focus attention on ensuring that broad agency promotion of TUR is taking place through this new multi-media infrastructure. They must show that resources expended thus far have not only made TUR possible, but have made TUR a proven agency accomplishment. Specific DEP mandates yet to be completed and the DEP actions planned in FY 95 to address these unmet mandates are outlined in Attachments A and D.

DEP'S IMPACT ON TUR:

DEP has succeeded in providing the infrastructure necessary for the LQTU program to operate. The framework is in place to allow significant progress in encouraging the implementation of TUR strategies at the facility level. However, data to effectively measure the impact of DEP's refocus towards toxics use reduction, and to measure the impact of the TURA Program as a whole, is limited at best.

Some trends in TUR progress have been identified by DEP from the data submitted by LQTU's covering calendar years 90-92. (1993 data was due from companies on July 1, 1994 will be available in November, 1994)

- Between 1990 and 1992, the reported total chemical use increased by 6% from 1.22 billion lbs in 1990 to 1.29 billion lbs in 1992. Similarly, byproduct increased by 25% from 123 million lbs to 154 million. However, these raw numbers are misleading and understate the progress made in TUR by individual LQTU's. Raw use and byproduct numbers can increase even as a company becomes more efficient: if business grows or the company expands. In addition, the universe of chemicals grew (in 1990 300 SARA chemicals were required to be reported; in 91 the list expanded to include the first one-third of the CERCLA chemicals; and in 1992 and 1993, the second and last third of the CERCLA list were phased into the reporting requirements) and the types of companies reporting expanded (SIC codes expanded from 20-29 in 1990 to include 10-14, 40, 44-51, 72, 73, 75 and 76 in 1991). (Figure 10.)

- Of the 1000 reportable chemicals, 162 different chemicals are actually used above thresholds and are reported in Massachusetts. (Figure 11.)
- Out of the 600 companies that reported under TURA in 1990, approximately 450 were still reporting in 1992. For these 450 companies, use dropped off by 5% in the first year and 9% in the second year. Byproduct remained the same over the three year period. (Refer to Figure 2)
- A comparison of 1992 and 1991 byproduct reduction indices (BRI) shows that there were more positive BRIs than zero or negative in 1992, whereas in 1991, zero BRI's were in the lead. (A positive BRI indicates that a company has less byproduct, adjusted for production, in the reporting year than in the base year for a given production unit/chemical, a negative BRI indicates more byproduct, and a zero BRI means that byproduct levels remain the same.) These figures indicate that there are more companies successfully identifying and implementing TUR techniques in 1992 than in 1991. (Refer to Figure 3.)

It should also be understood that the major tool for promoting TUR in TURA is the requirement that industries prepare Toxics Use Reduction Plans. The first TUR Plans were prepared by industries in 1994 and Plan Summaries were required to be filed at DEP in July of this year. TUR strategies identified and chosen for implementation in these plans will, in the long run, be the true indicator of the success of TUR as a sustainable approach towards environmental protection. While DEP is evaluating the Plan Summaries submitted, some good news has been compiled. This fall, DEP conducted TUR Plan inspections and surveyed a statistically significant number of firms in Massachusetts who had submitted TUR Plan Summaries in July. The results of these inspections and the survey are as follows:

- Of the 59 Plans reviewed by DEP in on-site inspections, only 15% required enforcement followup and half of those enforcement actions involved minor violations only.
- nearly 80% of the companies found the planning process useful;
- 92% of the firms actually planned to implement TUR strategies;
- 90% of the firms had upper management involvement in the planning process;

CHEMICALS AND SIC CODES IN TURA REPORTING

	1990	1991	1992	1993
What Chemicals Are Reported?	• SARA Chemicals	• SARA Chemicals • One third of CERCLA Chemicals	• SARA Chemicals • Two thirds of CERCLA Chemicals	• SARA Chemicals • All CERCLA Chemicals
Who Has To Report?	• Manufacturing SIC Codes 20-39	• Manufacturing SIC Codes 20-39 • Non-Manufacturing SIC Codes	• Manufacturing SIC Codes 20-39 • Non-Manufacturing SIC Codes	• Manufacturing SIC Codes 20-39 • Non-Manufacturing SIC Codes

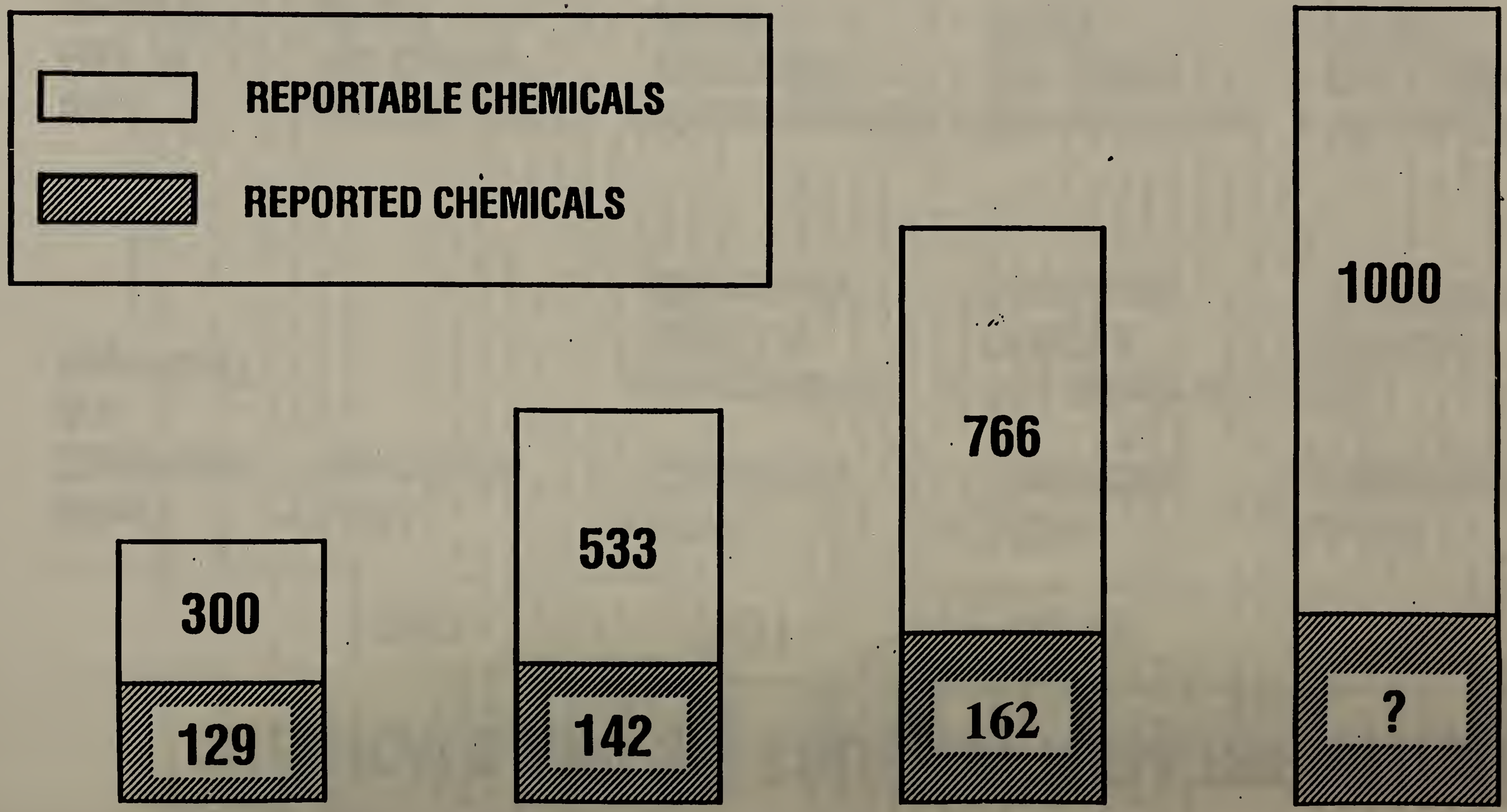
SARA: Superfund Amendments and Reauthorization Act

CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act

Industrial Classification Code

FIGURE 11

REPORTED CHEMICALS IN RELATION TO REPORTABLE CHEMICALS



As this data clearly indicates, companies took the planning process seriously, found it useful, identified TUR options, and are planning to implement TUR in the coming years. While data today may not be readily available to prove substantial TUR progress, the future looks bright.

DEP FY 95 Plan:

The strategic plan outlining the goals and accomplishment for FY 95 is included as Attachment D. As the plan indicates, DEP again is facing resource constraints as the TURA Office attempts to address regulatory development mandates, as well as some specific data release and analysis deadlines. DEP will have to work with the Council, OTA and TURI to ensure that the remaining mandates are completed and that the Program can provide the visible signs of progress so necessary to renew and maintain the support of its early constituents and to guarantee continued benefits to the environment and public health. Cooperative efforts will be encouraged by the Council, such as the funneling of compliance questions from the limited DEP TURA staff to OTA personnel. Efforts to provide cross-training of staff to successfully carry out these cooperative ventures are on-going.

THE TOXICS USE REDUCTION ADVISORY BOARD

ORGANIZATION AND STAFFING:

The Advisory Board was first appointed by the Governor in 1991. Representative Geoffrey Beckwith, one of the sponsors of TURA, was the first chair of the Board and a major early force in maintaining support for the Program. Other past members include George Lemos from Polaroid Corp., Marcia Benes from the Mass. Assoc. of Health Boards, Paul Richard from the Upper Blackstone Water Poll. Abatement District, Nick Zeo from the American Postal Workers, and Bob Spinney from the Sheet Metal Workers.

Currently, Susan Swedis, a public member of the Council, is Chair of the Advisory Board. Other members include Ann Berwick from the Office of the Attorney General; Kevin McManus of the MWRA; Hillel Gray from the National Environmental Law Center; Robert (Tim) Hawes from Polaroid Corp., Gary Siegel of Goldman Environmental Services; Jeff Heroux from Operations Management International, Inc.; Richard Herring from the Gloucester Company; Robert Chatel from the Robbins Company; Gretchen Latowsky from the John Snow Institute; Kathleen Hearn representing the public; Susan Shepherd from the Massachusetts Coalition for Occupational Safety and Health; and John Mahoney from the Teamsters Union Local #379.

ADVISORY BOARD EFFORTS:

Since its formation, the Board has attempted to prod the implementation of the Program and to make TUR a priority for the new Administration and staff. In the face of the lack of dedicated Administrative Council staff, the Advisory Board has struggled to maintain an active role in the Program. However, by meeting for the most part on a monthly basis to discuss issues relating to program implementation, to review new legislative initiatives, and to provide comment on proposed budget allocations, the Advisory Board has sought to provide the type of input mandated under the Act. However, because the Administrative Council has not effectively taken on the role of program coordinator, recommendations from the Advisory Board have in many cases not been acted upon. As a result, efforts of the Board have waxed and waned until additional focus was placed on the Program aided by the recent hiring of dedicated Council staff.

The Advisory Board was successful however, in organizing the first Annual Governor's TUR Awards in May of this year recognizing the TUR achievements of six Massachusetts companies, including: the U.S. Postal Service Massachusetts Vehicle Maintenance Facilities; the National Microscale Chemistry Center at Merrimack College; KomTek, a metals manufacturer in Worcester; DyDee Diaper Service in Boston; Johnson & Johnson Professional Services of New Bedford, and Raytheon Company. The TUR accomplishments achieved by the Award recipients offered tangible evidence that significant benefits to the environment can be achieved while saving money for the companies. The awards present an opportunity for the Advisory Board to spread the TUR message.

THE ADMINISTRATIVE COUNCIL ON TOXICS USE REDUCTION

ORGANIZATION AND STAFFING:

Members of the TUR Administrative Council include Trudy Coxe, Secretary of Environmental Affairs and Chair; Gloria Larson, Secretary of Economic Affairs; Christine Morris, Secretary of Labor; David Mulligan, Commissioner of the Department of Public Health; and Thomas Powers, Commissioner of the Department of Environmental Protection. The Council hired its first dedicated staff person, the Executive Director, in June 1994. Until that time, the Director of Waste Policy or another EOEA staff person had taken the responsibility to organize Council meetings and to respond to issues raised by the Advisory Board.

The lack of Council staff has limited the Council's ability to effectively coordinate the Program. However, the Council has been meeting on a regular basis since 1993 and has provided a forum for the discussion of many issues critical to the Program. Progress has been made by the Council on its statutory mandates.

COUNCIL EFFORTS:

- The adjustment of TURA fees to respond to DEP's survey. The Act requires that between $4-$5.5 million be collected annually. The small number of filers required the upward adjustment of fees by the Council. Annual inflation-tracking adjustments to the fees have not been enacted however.
- The Council established and implemented a policy for fee waivers. Since 1991, 47 requests for fee waivers based on severe financial hardship have been received by the Council. These requests were reviewed by OTA and EOEA staff and acted upon by the Secretary of Environmental Affairs. A total of 17 waivers, 23 payment plans and one fee reduction have been granted.
- EOEA staff to the Council drafted and submitted a bill during the 1993 legislative session to allocate $2 million in unspent TURA fees to guarantee loans for TUR initiatives at TURA-regulated businesses. The bill was not acted upon and was not refiled in 1994. Although the bill sought to use money which otherwise could be (and was) diverted by the legislature for non-TURA related projects, concerns with the bill were raised by business and public interest groups.
- The Council adopted regulations establishing the list of TURA regulated toxic and hazardous substances. The regulations called for gradual phase-in, from 1991-1993, of all chemicals regulated under CERCLA and EPCRA.
- The Council has received 12 requests to delist a total of 8 substances from its list of TUR regulated substances. The Council was not able to take action to delist until 1994. The Council has not taken any action thus far pending the

recommendations of the Science Advisory Board whose members were appointed by Governor Weld this fall. Board members include Linda Grisham from the Revere Financial Group; James Ahearn, Jr. from Polaroid Corporation; George Gray from the Harvard School of Public Health; Andrew Beliveau from Metcalf and Eddy; Halina Brown from Clark University; Richard Clapp from B.U. School of Public Health; Susan Bernstein from Rubin and Rudman Associates; Gerald Johnson from Airborne Express; Daniel Greenbaum from the Health Effects Institute; and Margaret Condron from Boston College. The first meeting of the Science Advisory Board was held in October of this year. Policies established by DEP on metalworking operations (discussed in the section on DEP accomplishments) and phthalate esters have addressed many of the delisting concerns, leaving the Council with only 4 active requests for substance delisting. TURI, at the request of the Council has been collecting data on the substances requested for delisting and initial discussion has occurred between TURI and DPH on the criteria for delisting.

- In September 1994, the Council approved modifications to the TUR list to add chemicals that had already been added to the CERCLA or EPCRA list, and to shorten the time period in which subsequent list changes would take effect in order to maintain consistency between the federal and state lists and to eliminate reporting confusions.
- The Council completed a report in 1992 which identifies all federal and state laws, regulations and reporting requirements related to chemicals and hazardous materials. This report was seen as the first step in a major effort to address statutory mandates to recommend modifications to reporting and compliance standards to eliminate redundancies, reduce paperwork, and eliminate regulatory impediments to toxics use reduction. As a next, long awaited step, TURI has completed a second study to begin to analyze the information collected and to coordinate Council activities with on-going efforts to identify needed regulatory revisions, most notably within DEP's OPI, and to recommend specific policy, regulatory or statutory action. This draft report was finalized and presented to the Administrative Council in late September 1994. Followup by the Council is planned to further review this issue and to establish a strategy to implement recommended changes. In addition, the Council will seek to coordinate its efforts with ongoing EOEA efforts to streamline the process for applying for and obtaining all environmental permits which may increase opportunities for TUR. Data management issues, such as electronic data filing and the possibility of consolidated reporting, are important considerations not only to improve the quality of the data but to improve the speed with which data can be generated and analyzed. Data issues will become more and more critical and the completion of these tasks will require a substantial investment of resources.

- The Council held public hearings, in conjunction with TURI, to receive comment on the chemical restrictions report.
- The Council has begun an effort to review all proposed regulations relating to toxics to comment on their consistency with the goals and objectives of the Act. The first comments were submitted on behalf on the Council to DEP in July 1994.

Other statutory responsibilities include:

- Promulgation of regulations identifying priority user segments which will be taken into consideration in 1995 (due 7/1/95).

- The preparation of an Annual Report. This document is the first such report that has been prepared and approved in final form by the Council for distribution. Future Annual Reports will be issued in the fall of each year.

THE ADMINISTRATIVE COUNCIL'S FY 95 PLAN:

The Council in FY 1995 will take on the intended role as coordinator of the TURA Program. The Council will oversee the efforts of each component, assist in the clarification of the roles and responsibilities of each agency; and ensure the most effective use of Program resources to get all the components of the Program on, and keep them on, track. To accomplish this, the Council will establish a TURA interagency workgroup to allow all policy issues which effect the Program or which raise TUR concerns to be given full benefit of the expertise and interests represented by TURA staff throughout the Program. The Council will ensure broad public review and input on all regulatory development and significant policy issues by requesting the establishment of, and by fully utilizing, ad hoc committees of the TUR Advisory Board. In FY 95, the Council will seek committees to assist in the development of priority user segments and TURA waiver regulations, as well as to provide direction relative to the use of nonallocated TURA funds. This full use of the talents and interests of the Advisory Board will provide for the public review and input envisioned under the statute, will eliminate the need for separate DEP TURA regulatory advisory groups, and will provide a mechanism for better Program and public oversight of regulatory development.

One of the major roles of the Administrative Council in FY 1995 will be the coordination of efforts to evaluate the success of the TURA Program, including coordinating the collection and analysis of data to measure or indicate progress in meeting the many goals of the Toxics Use Reduction Act. To perform this role successfully, the Council will work to realize the recommendations outlined at the beginning of this report, in particular to develop a more accessible, more comprehensive database to allow progress towards TUR to be better assessed and to allow for better targeting of TURA services.

The Council will in FY 95, continue to work towards the identification of regulatory barriers which prevent implementation of TUR techniques, to work to remove those barriers, and to investigate reporting requirements and consolidation. The Council will seek out the assistance of TURA agency staff in these efforts. The advice of TURI and the Science Advisory Board will also be sought by the Council in FY 95 to assist in determinations relative to the listing and delisting of chemicals from the list of TUR regulated substances.

TURA FUND EXPENDITURES

The Administrative Council is directed under TURA to provide an accounting of expenditures of industry fees collected in the Toxics Use Reduction Fund (Fund number 149).

To provide a full accounting of TURA expenditures, the following information is provided:

Figure 12 is a table of actual expenditures from the TURA Fund, FY 91 - FY 94 and projected FY 95 expenditures, for each TURA agency (OTA, TURA or DEP, and TURI).

Figure 13 is a table showing actual TURA Fund FY 91 - FY 94 revenues and expenditures, and FY 95 Projections.

Figure 14 is a table comparing total TURA expenses and revenues FY 90 - FY 95 projections.

Figure 15 is a table showing TURA revenues, appropriations and actual expenditures for each agency FY 91 - 94.

Attachment E contains a listing of personnel employed by OTA, TURI and DEP. An OTA list is also provided indicating each individual's field of expertise. The TURI list contains job titles as well as a breakdown of TURI staff vs. consultants. The DEP list provides a brief description of each currently TURA funded position and job function, a breakdown of personnel by fiscal year and office, and the purpose of and costs associated with contractual services. DEP also provides a list of TURA Program related positions which are not supported through TURA money. Attachment E, with the agency specific personnel breakdowns, is designed to address questions and concerns which have arisen concerning the salary and consulting expenses of each agency.

Overview:

These figures clearly document the slow startup of the TURA Program. In FY 91, the Program's first full year, less than $900,000 was expended while revenues nearly reached $2,500,000. By the end of FY 93, the amount of funds collected under TURA exceeded expenditures by nearly $4,900,000.

The early failure to hire staff and expend TURA funds resulted from low appropriations (in FY91 only $875,000 was appropriated by the Legislature for the start-up of all three agencies), the inability of each agency to hire staff due to hiring freezes and personnel problems, and a lack of available office space to house additional employees.

FIGURE 12

TOXIC USE REDUCTION FUND (FUND NUMBER 149)
(tura.wk1)
EXPENDITURES

Sub	Description	FY'91 OTA 2020-0100	FY'91 TURA 2210-1000	FY'91 TURI 7220-0004	FY'92 OTA 2020-0100	FY'92 TURA 2210-1000	FY'92 TURI 7220-0004
00	All Expenditures						
AA	Regular Emp. Comp.	119,306.55	53,319.44	114,634.00	384,112.97	310,160.00	327,433.00
BB	Emp. related exp (meals, memberships conferences,etc)	5,463.10		5,448.00	33,467.51	147.00	15,746.00
CC	Spec. Emps.(interns seasonals, bd mbrs)			30,736.00	143,804.43		91,138.00
DD	Chargebacks	2,221.04			4,655.73		75,427.00
EE	Admin. Expenses (supplies, postage, phones, ads)	30,959.96		18,690.00	115,678.39		77,494.00
FF	Facility Operations						24,449.00
GG	Space rentals and related expenses			127,160.00	4,817.50		103,172.00
HH	Consultants	61,336.13	157,500.00	14,416.00	209,902.07	314,000.00	130,675.00

FIGURE 12 (CONT)

TOXIC USE REDUCTION FUND
(tura.wk1)
EXPENDITURES

Sub	Description	FY'95		
		OTA 2020-0100	TURA 2210-1000	TURI* 7220-0004
	APPROPRIATION	1,850,323.00	1,005,734.00	1,464,290.00
00	All Expenditures			
AA	Regular Emp. Comp.	1,850,323.00	1,005,734.00	1,464,290.00
BB	Emp. related exp (meals, memberships conferences,etc)	THIS IS APPROPRIATION ONLY OTA includes a $40K PAC		
CC	Spec. Emps.(interns seasonals, bd mbrs)			
DD	Chargebacks			
EE	Admin. Expenses (supplies, postage, phones, ads)			
FF	Facility Operations			
GG	Space rentals and related expenses			
HH	Consultants			

TOXIC USE REDUCTION FUND
(tura.wk1)
EXPENDITURES

Sub	Description	FY'93			FY'94		
		OTA 2020-0100	TURA 2210-1000	TURI 7220-0004	OTA 2020-0100	TURA 2210-1000	TURI* 7220-0004
JJ	Operational service (janitors, HW, snow rubbish removal)	988.00	2,332.93	89,639.00	3,853.00	7,999.86	103,794.00
KK	Equipment	69,242.68	9,993.53	156,921.00	23,098.00	54,906.76	26,496.00
LL	Eqpmt leases	25,715.08	0.00	4,333.00	3,803.00		2,331.00
MM	Purchase Service			29,490.00			18,688.00
PP	State Aid						
	EXPENDITURES	1,232,522.10	519,924.94	1,303,219.00	1,492,702.00	815,438.62	1,445,240.00

* TURI FY 94 figures are based on invoices submitted for payment. Actual expenditures total $1,401,000.

FIGURE 12 (CONT)

TOXIC USE REDUCTION FUND
(tura.wk1)
EXPENDITURES

Sub	Description	FY'93			FY'94		
		OTA 2020-0100	TURA 2210-1000	TURI 7220-0004	OTA 2020-0100	TURA 2210-1000	TURI* 7220-0004
	APPROPRIATION	1,479,205.00	763,856.00	1,466,137.00	1,829,313.00	953,897.00	1,466,137.00
00	All Expenditures						
AA	Regular Emp. Comp.	659,574.37	440,168.91	282,900.00	1,087,597.00	714,267.46	366,683.00
BB	Emp. related exp (meals, memberships conferences,etc)	22,085.42	12,520.18	20,647.00	35,088.00	7,923.53	29,065.00
CC	Spec. Emps.(interns seasonals, bd mbrs)	88,592.93	0.00	85,697.00	51,499.00		102,222.00
DD	Chargebacks	5,723.15	0.00	5,065.00	24,565.00		4,124.00
EE	Admin. Expenses (supplies, postage, phones, ads)	98,710.32	8,712.85	94,613.00	136,522.00	10,418.41	180,402.00
FF	Facility Operations	3,735.38	0.00	66,292.00			24,271.00
GG	Space rentals and related expenses	759.42	0.00		3,055.00		
HH	Consultants	257,395.35	46,196.54	467,622.00	123,622.00	19,922.60	587,164.00

TOXIC USE REDUCTION FUND (FUND NUMBER 149)
(tura.wk1)
EXPENDITURES

Sub	Description	FY'91			FY'92		
		OTA 2020-0100	TURA 2210-1000	TURI 7220-0004	OTA 2020-0100	TURA 2210-1000	TURI 7220-0004
JJ	Operational service (janitors, HW, snow rubbish removal)		11,926.57	0.00	3,675.00		1,279.00
KK	Equipment	34,468.35		28,006.00	307,630.47		136,029.00
LL	Eqpmt leases	2,126.52			7,972.60		678.00
MM	Purchase Service						
PP	State Aid						
	EXPENDITURES	255,881.65	222,746.01	339,090.00	1,215,716.67	624,307.00	983,520.00

FIGURE 12 (CONT)

TOXIC USE REDUCTION FUND
(tura.wk1)
EXPENDITURES

Sub	Description	FY'95		
		OTA 2020-0100	TURA 2210-1000	TURI* 7220-0004
JJ	Operational service (janitors, HW, snow rubbish removal)			
KK	Equipment			
LL	Eqpmt leases			
MM	Purchase Service			
PP	State Aid			
	EXPENDITURES	1,850,323.00 [a]	1,005,734.00	1,464,290.00

[a] total for OTA includes monies set aside for administrative council

ATTACHMENT B

FIGURE 13

Toxic Use Reduction Fund (fund 149)

	FY'91	FY'92	FY'93	FY'94 (c)	FY'95 Approp.	FY'96 Projected.
STARTING BALANCE	448,462.50 a	1,622,403.84	3,500,000.00 (c)	4,888,145.46	3,106,915.84	324,602.84
FY REVENUES	2,049,163.00	4,757,499.00	4,813,678.50	4,505,000.00 *	4,300,000.00 *	4,700,000.00
TOTAL AVAILABLE	2,497,625.50	6,379,902.84	8,313,678.50	9,393,145.46	7,406,915.84	5,024,602.84
					* estimates	
Direct Expenses						
OTA	255,881.65	1,215,716.67	1,232,522.10	1,492,702.00	1,850,323.00	1,850,323.00
TURA	222,746.01	624,307.00	519,924.94	815,438.62	1,005,734.00	1,005,734.00
TURI	339,090.00	983,520.00	1,303,219.00	1,401,000.00	1,464,290.00	1,464,290.00
10% of 21E	n/a	n/a	n/a	1,426,089.00 b	1,485,966.00 b	0.00
Cape Cod CC (7504-0101)		n/a	n/a	n/a	125,000.00	0.00
Subtotal	817,717.66	2,823,543.67	3,055,666.04	5,135,229.62	5,931,313.00	4,320,347.00
Indirect Expenses						
FRINGE	57,504.00	178,819.00	369,867.00	1,134,000.00 *	1,134,000.00 *	600,000.00
Medicare tax				17,000.00	17,000.00	17,000.00
	57,504.00	178,819.00	369,867.00	1,151,000.00	1,151,000.00	617,000.00
TOTAL EXPENDITURES	875,221.66	3,002,362.67	3,425,533.04	6,286,229.62	7,082,313.00	4,937,347.00
ENDING BALANCE (total available - total expended)	1,622,403.84	3,377,540.17	4,888,145.46	3,106,915.84	324,602.84	87,255.84

* FY94 Based on AA expenditures: OTA 1,087,597; TURA 714,267; 10% of 21E 1,152,357

a Revenue collected in FY'90, the first year of the legislation

b 10% of the costs of the 21E prgrm charged to the TURA fund in FY'94 and FY'95 FRINGE RATES: FY91-34.01%; FY92, FY93--27.83%, FY94--33.37%;FY95--31.97% (by law, a % of the amt spent on personnel is charged to any dedicated fund (MGLC 29, s. 5D)

c Based on Comptroller's preliminary FY'94 CAFR

TOXIC USE REDUCTION FUND (FUND 149)

TOTAL AMOUNTS EXPENDED

FY'91		875,221.66
FY'92		3,002,362.67
FY'93		3,425,533.04
FY'94	a	6,286,229.62
FY'95	a	7,065,313.00 (est)
TOTAL		20,654,659.99

REVENUES:

FY'90	448,462.50
FY'91	2,049,163.00
FY'92	4,757,499.00
FY'93	4,813,678.50
FY'94	4,505,000.00 (est)
FY'95	4,300,000.00 (est)
TOTAL	20,873,803.00

a total costs include the following: 10% of the costs of the 21E program (FY'94 and FY'95); fringe benefits (FY'94 and FY'95); and the Cape Cod Community College Program (FY'95)

FIGURE 15

COMPARISON OF AVAILABLE REVENUES, APPROPRIATIONS AND EXPENDITUTURES

"revenues available" -- unexpended balance from previous fiscal
years plus revenues collected in that fiscal year

	FY'91	FY'92	FY'93	FY'94	FY'95 Est.
Revenues Available	2,497,625.50	6,379,902.84	8,313,678.50	9,393,145.46	7,406,915.84
Appropriations	1,275,000.00	3,010,000.00	3,709,198.00	4,249,347.00 *	4,320,347.00
Expenditures	875,221.66	3,002,362.67	3,425,533.04	4,502,880.62 *	5,069,847.00

* these figures reflect OTA, DEP and TURI direct and indirect expenditures only. The $1.5M appropriated to support the 21E program, the fringe cost associated with 21E, and the $ for Cape Cod Comm. College are not included.

Expenditures throughout the Program reflect the ramping up of staff and equipment over the first three years, consistent with Program output. Consultants were used extensively by OTA and TURI to allow prompt dedication of personnel to specific TURA mandated tasks and to allow for the short term use of needed, highly technical individuals. DEP consulting expenses in FY 91 and 92 (totalling $471,500.) were used to develop the TURA database system, while in FY 93 and 94, consulting expenses related to the research and development of TURA regulations and MIS. (DEP consulting costs are broken down by fiscal year and purpose in Attachment E.)

Equipment expenses for both OTA and TURI peaked in FY 92 and FY 93, as each agency was staffing up and as office space became available. Administrative expenses for both TURI and OTA remain large expenditures reflective of the tasks each agency must accomplish under TURA to disseminate information, educational materials, and technical assistance as methods of promoting TUR.

It is important to note that the TURA Program is also supported and serviced by EOEA and the University of Massachusetts. For the most part, this support has not been compensated through TURA Fund industry fee revenues.

> EOEA senior staff have organized Council meetings, arranged appointment of Advisory Board members, developed TURA regulations, and investigated requests for fee waivers. The Executive Office has provided legal, accounting, personnel, and other administrative support to OTA. OTA has not been charged for space rentals and related expenditures. OTA has compensated EOEA to the extent that in 92 and 93, 2 EOEA positions (one full time and one part time) were funded through OTA. In 93 and 94, as OTA increased staff, only one EOEA position was funded through OTA.
>
> Other DEP personnel have worked on TURA related issues without compensation through the Program. These individuals are identified in Attachment E. In addition, in FY 1994, $93,000 in MIS services were provided to the Program without the use of TURA funds.
>
> TURI's indirect costs including heat, space, electricity, and building maintenance are donated by the University of Massachusetts at Lowell. In addition, the salaries of and travel expenditures of the Director and Deputy Director are paid directly by the University.

TURA Fund Raids:

The failure to appropriate larger amounts of TURA revenues to support the agencies operational budgets in FY 91, 92, and 93, in addition to the inability of the agencies to expend monies appropriated, particularly in FY 91 (as shown in Figure 13), led to the growth of a substantial pot of money in the TURA Fund, as shown in Figure 14. Portions of this carried over money have been diverted by the Legislature to support non-TURA related activities. In FY 94, $1.5 was raided from TURA to support the 21E Program and in FY 95 $1.5 million was again diverted to 21E and an additional $125,000 was given to support a job training program at Cape Cod Community College.

As shown in Figure 14, the operational budgets of the TURA agencies now match projected revenues. Therefore, any continued diversion of TURA monies cannot be supported through TURA revenues without reducing the operating budgets of OTA, TURI and DEP, and jeopardizing the continuation of the Program's core services.

ADMINISTRATIVE COUNCIL POLICY RECOMMENDATIONS TO PROMOTE TUR IN MASSACHUSETTS

As a result of the start-up problems noted above, the Administrative Council's delayed hiring of devoted staff to TURA Program management, the resource allocation decisions of DEP, and the recent legislative raids of TURA Funds, the TURA Program is losing support. Criticism of the Program's implementation has overshadowed many of its laudable accomplishments. While the concerns discussed in the previous section of this report should not be understated, neither should the many accomplishments. In fact, given the slow start-up, the accomplishments detailed in this report are impressive, particularly since they reflect only three years of full Program implementation.

Nevertheless, as a Program which relies so heavily on voluntary industry efforts, significant progress towards all the goals of the statute requires that industry and regulators work together to maintain the sense of conviction and enthusiasm for TUR that led to the Act's unanimous passage. For this reason, the Administrative Council must address these growing concerns and seek action to stem growing dissention which threatens the Program's success.

After a review of the implementation of the TURA Program and expenditures made from the TURA Fund, as detailed in this report, the Administrative Council on Toxics Use Reduction offers four policy recommendations for consideration by the Governor:

1. **There is overwhelming agreement that we must continue to offer strong support to the TURA Program, including the provision of sufficient monies from the TURA Fund for the full operation of the TURA agencies. In addition, the TURA Fund must be protected from the continued diversion of funds to finance non-TURA related activities. These diversions or raids threaten Program support and turn the TURA fees into an additional industry tax. Specifically, the Council recommends that any attempt to divert TURA Funds to non-TURA related programs be vetoed. A funding source must be identified for the 21E program that does not involve TURA monies, and any continued funding of the job training program at Cape Cod Community College must be achieved without the use of TURA fees.**

   As this Annual Report documents, the TURA Program has already produced strong evidence to indicate that TUR strategies can and do achieve substantive positive environmental and economic results. The Program itself represents tangible proof that the way government operates can be altered to allow the state to act as a catalyst for positive change. Environmental protection can be achieved in economically sustainable ways.

The lessons learned from the TURA Program, both positive and negative, as detailed in this Report, provide valuable information to guide program development in Massachusetts and other states as state agencies continue to define and implement programs to more effectively target public resources.

2. **The TURA Fund, including FY 1995 projected fees, will exceed the amount appropriated to the TURA agencies in FY 1995 by approximately $1.3 million, if the TURA Fund is not charged the fringe benefits associated with the 21E Program. For this reason, the Council recommends that the Governor file language an upcoming budget to exempt the TURA Fund from the fringe costs associated with the 21E program in both FY 1994 and FY 1995. We believe that these costs were not intended by the legislature and will lead to a further eroding of support for a very valuable state program.**

   Budgeting problems and hiring freezes which caused delays in the full implementation of the Program also resulted in substantial amounts of TURA Funds remaining unspent, particularly in the early years. In FY 94 and 95, these unspent industry fees ($3.125 million) have been diverted by the legislature to support non-TURA related programs.

   Very recently the Council became aware of the fact that fringe benefits associated with the 21E program were being charged to the TURA Fund in accordance with MGL Chapter 29, Section 5D. These unanticipated charges will devastate not only the TURA budget by bringing the surplus money down to nearly zero, they will also devastate the spirit of those who have supported the Program and have been working so hard to see that its goals are realized.

3. **Prior to the realization that fringe costs associated with the 21E program would be charged to the TURA Fund, an ad hoc committee of the TUR Advisory Board developed a plan to use surplus TURA Funds for specific TUR purposes to avoid expected fund raids in FY 1996. This plan received near unanimous approval from the ad hoc committee and the Advisory Board as the best, most likely to succeed compromise proposal for the use of surplus industry fees. It was understood that efforts to use surplus monies to increase the Program's operational budget would in all likelihood fail, and that any remaining nonallocated money in the TURA Fund would almost assuredly be raided by the legislature in FY 1996.)**

   The Council now asks the Governor's support for this proposed spending plan in conjunction with the action sought in #2 above to restore the surplus fees. Specifically, the

Council asks that you include language in the next appropriate budget to dedicate TURA funds to equally support the following distinct but inseparable actions:

a) A $500,000 one time rebate back to those firms who have supported the Fund through TURA fees in FY 1991 and FY 1992, under the direction of the TUR Administrative Council, consistent with the recommendations of the TUR Advisory Board.

b) An equal portion of remaining FY 95 TURA funds (approximately $500,000, leaving approximately $300,000 in the TURA Fund to allow for lower than projected revenues) to improving public access to TURA data and to facilitate the prompt, reliable assessment of data necessary to determine the success of the Program. Completion of statutory mandates such as electronic data filing and consolidated reporting will serve the dual purpose of improving public access to and prompt assessment of TURA data. It will also free up industry environmental, health and safety staff from unnecessary burdens associated with complex, often duplicative reporting requirements. Monies should be specifically allocated to fund a program to improve public access to TURA data as a potentially multiyear effort under the direction of the TUR Administrative Council, consistent with recommendations of the TUR Advisory Board.

It is impossible to overstate the anger and resentment which has arisen over the diversion of TURA industry fees to support non-TURA related programs. The fund diversions, coupled with the unmet TURA mandates resulting from resource allocation decisions which were not sensitive to the balance of interests reached in TURA, have eroded the base of support for the Program and begun to overshadow its considerable accomplishments. The rebate will go a long way as a measure of good faith and it may help (along with the finalization of this report and the current efforts to focus adequate resources on Program management), to again bring industry to the table to work with the environmental community and the state to oversee the Program's implementation and to ensure its success.

Early and easy public access to reliable data on the use of toxics and generation of wastes is a critical, not yet adequately addressed, concern of the Program which is recognized by all stakeholders. Improved data is necessary to fully assess the impact of the services rendered thus far, to direct the future allocation of Program resources, and to assess the overall success of the Program in meeting the statutory goals. Rather than continue to address this issue through the piecemeal approach consistent with existing funding levels, a significant dedication of TURA Funds under the direction of the Council (with input from the Advisory

Board) is unanimously recommended as a way to produce significant results in a more appropriate timeframe. As 1997 approaches, the most critical year of the Program in which statutory goals must be assessed, data management and public access become critical concerns deserving of immediate consideration.

4. **In the future, legislative attempts to dedicate TURA Funds to support specific research efforts must be vetoed. In the past, a large portion of TURI's research dollars have been targeted by the Legislature to support the Microscale Chemistry Center at Merrimack College. All TUR Research dollars should be allocated directly to TURI for its distribution.**

   While the Microscale Center may be a suitable TUR research effort, TURI's distribution of research dollars must be flexible enough to respond to the changing needs of Massachusetts industries. Dedicating such a large portion of the TURI research dollars to the development of a particular technology, such as the Microscale Center, limits the ability of TURI to support those research efforts and technology development projects that are prioritized by TURI's industry focus groups. While the work of the Microscale Center is laudable (in fact; the Center received one of six Governor's Awards for TUR), the Council believes that all TUR research dollars should be given directly to TURI for its competitive distribution and careful control.

Lastly, the Administrative Council also seeks general support for the following guidelines which it believes will promote toxics use reduction through better, more coordinated, more focused implementation of the TURA Program in FY 1995. These guidelines can be summarized as follows:

- **We must work dilligently in FY 1995 to catch up on the stalled statutory mandates, most importantly the "user segment" regulations. To accomplish this, we must utilize resources available throughout the Program, coordinate our actions, avoid duplication of efforts, focus our resources, and work together as one Program.**
- **We must learn from the first planning year to improve both the planning process and the quality of TUR plans.**
- **We must seek to gather the data necessary to quantitatively, as well as qualitatively evaluate the Program as a whole, its components, and its services. As one of the most comprehensive efforts to promote TUR in the nation and the world, we have an obligation to not only implement the Program as effectively as possible, but to allow others to learn from our successes and failures.**

- **We must, as an industry fee supported program, be cautious to direct resources in a manner consistent with the statute in both its letter and its spirit.**
- **We must (given that the TURA Program is so critical to our environmental future by offering proof on the compatability of environmental protection and economic well-being) do all we can to carefully evaluate the premises which underlie the Toxics Use Reduction Act and to determine if its goals can and are being realized.**

With these few guiding principles, the Administrative Council is confident that the above recommended actions in conjunction with the completion of this report (including program activities and accomplishments, a clear disclosure of where and why the Program has fallen short of expectations, and a strategy for FY 95 activities, and a full disclosure of TURA expenditures) will address the legitimate questions and concerns relating to the implementation of the TURA Program and will restore the broadbased support necessary to ensure Program success.

ATTACHMENTS

ATTACHMENT A

THE TOXICS USE REDUCTION ACT
MANDATES AND ACCOMPLISHMENTS

ATTACHMENT A

THE TOXICS USE REDUCTION ACT
MANDATES AND ACCOMPLISHMENTS

STATUTORY DEADLINE	ACTION/DELIVERABLE	RESPONSIBLE PARTY	STATUS
1989 on	Provide technical assistance to toxics users in TUR and in complying with the statute.	OTA	Ongoing
1989 on	Provide outreach to small businesses subject to TURA and shall assist first time filers with reporting requirements and trade secret submissions.	OTA	Ongoing
1990 on	Issue TURA fee waivers to small businesses, with annual report to Administrative Council on all waivers issued.	EOEA	Ongoing
1/1/90	Issue Production Unit Classification Guidelines.	DEP	Winter 1990
5/1/90	Toxics Use Survey sent to industry.	DEP	Spring 1990
11/1/90	Promulgate Regulations Adjusting Filing Fee to raise $5 million for reporting year 1990.	Admin. Council	Fall 1990
1990 annually thereafter	Policy Recommendation Report to Governor on TUR, implementation of the Act, expenditures from TUR fund, and achievement of increased toxics use reduction. Copy filed with Clerks of House and Senate.	Admin. Council	First report Summer 1994
1990 on	May comment on draft regulations pertaining to toxics production and use, hazardous waste, industrial hygiene, worker safety, public exposure to toxics, or release of toxics to the environment. May also provide Advisory Board with opportunity to comment.	Admin. Council	First comments Summer 1994
1990 on	May recommend to the Advisory Board the formation of ad hoc committees.	Admin. Council	First recommendations Summer 1994
1990 on	Provide forum for discussion on implementation of TURA.	Advisory Board	Ongoing
1990 on	Create ad hoc advisory committees on issues pertaining to the implementation of TURA.	Advisory Board	First ad hoc subcommittee1992

ATTACHMENT A (CONT)

STATUTORY DEADLINE	ACTION/DELIVERABLE	RESPONSIBLE PARTY	STATUS
1990 and annually thereafter	Establish and administer annual "governor's toxics use reduction award" to recognize outstanding individual and organizational, public and private achievement in TUR.	Advisory Board	First awards May 1994
1/1/91	Facility Master File implemented w/ computer connections to OTA, TURI, AG, other state agencies, POTWs.	DEP	FMF Fall 1992 connections to EOEA and OTA exist. Connections to AG,POTW, other state agencies being evaluated connections expected TURA subsystem done Summer 1992
1/1/91 annually thereafter	Identification of all laws and regulations on chemical production and use, hazardous waste, industrial hygiene, worker safety, public exposure to toxics and release of toxics to the environment. Council shall promote coordination of laws and determine what coordination is needed to promote toxics use reduction.	Admin Council	In process
1/1/91	Identify all state agency and POTW chemical reporting requirements and recommend needed coordination and consolidation.	Admin Council	In process
1/1/91	Promulgate regulations for adding CERCLA chemicals to TUR list.	Admin. Council	Fall 1991
1/1/91	Promulgate Annual TUR reporting and Trade Secret regulations and forms.	DEP	Spring 1991
1/1/91	Specify Criteria for TUR Plans and Plan Summaries.	DEP	Spring 1992
1/1/91	Promulgate TUR Planner Certification Regulations.	DEP	Spring 1993
1/1/91	Promulgate regulations for Toxics Use Reduction Waivers of permit conditions that promote TUR.	DEP	Expected FY95
7/1/91	First annual TUR reports submitted to DEP.	LQTUs	July 1, 1991

STATUTORY DEADLINE	ACTION/DELIVERABLE	RESPONSIBLE PARTY	STATUS
7/1/91 on	Develop and offer toxics use reduction planner course.	TURI	Summer-Fall 91
1992 and annually thereafter	Annual Report on TUR progress, based on TUR reports and TUR plan summaries submitted to Administrative Council and House and Senate Clerks.	DEP	First Analysis Fall 1993. First Report submitted to Clerks with First Annual Report (August 1994)
1/1/92 on	Provide general information about and actively publicize advantages and developments in TUR and the requirements of the Act.	TURI	Ongoing
1/1/92 on	Establish conferences, courses, events, publications, reports, etc. and work in cooperation with OTA to provide information to toxics users.	TURI	Ongoing
1/1/92 on	Develop and provide curriculum and training on TUR for higher education students and faculty.	TURI	Ongoing
1/1/92 on	Engage in research, development and demonstration of TUR methods including but not limited to assessments of environmental, public health and worker exposure, and economic and employment impacts.	TURI	Ongoing
1/1/92 on	Sponsor research and pilot projects on TUR technologies.	TURI	Ongoing
1/1/92 on	Provide TUR training to DEP staff.	TURI	Ongoing
1/1/92 on	Provide TUR training and assistance to citizens, community groups, workers, labor representatives, local government boards and officials on, at a minimum, understanding reports and plan summaries, and citizen petition and enforcement activities pursuant to TURA.	TURI	Ongoing
1/1/92	Establish Science Advisory Board for TURI.	Governor	Expected Sept. 1994
1/1/92	Establish systems for electronic filing of annual reports.	DEP	System under evaluation

STATUTORY DEADLINE	ACTION/DELIVERABLE	RESPONSIBLE PARTY	STATUS
1/1/92	Offer TUR Planner Certification Examination, begin Certifying Planners.	DEP	Spring 1993/Fall 1993
1/1/92	Promulgate Regulations Classifying Production Units.	DEP	Expected January 1995
1/1/92 on	Implement multi-media inspections at all DEP regulated facilities.	DEP	Full implementation Fall 1994
1/1/92 biennially thereafter	Coordinate reporting requirements in a manner consistent with the Administrative Council's recommendations.	All State Agencies	Council recommendations under evaluation
1/1/92 on	Develop and Implement policies that ensure to the maximum extent practicable that sources out of compliance with DEP regulations use TUR rather than treatment to return to compliance.	DEP	In process
1/1/92	Identification of all DEP requirements for reporting on chemical use, release and disposal, and standardize consolidate, and coordinate these to the maximum extent possible. DEP shall seek uniform reporting and enforcement authority from EPA.	DEP	Ongoing
1/1/92	Develop procedures for Citizen Petitions to request that DEP staff review a company's TURA plan.	DEP	Expected FY95
4/1/92 on	Publish in Massachusetts Register annual adjustment to filing fee, equivalent to increase in the Producer Price Index.	DEP	No adjustments needed to date
1/1/93	Report to Administrative Council on Chemical Restrictions Policy. Council shall file copy with Clerks of House and Senate and Joint Committee on Natural Resources and Agriculture and hold a public hearing.	TURI Admin. Council	January 93
1993 on	May promulgate regulations to add not more than ten chemicals per year to the chemical list and/or delete not more than ten chemicals per year from the TURA list effective calendar year 1994. DEP and DPH shall recommend chemical changes, the Admin. Council shall consult with TURI in making any changes.	Admin. Council DEP, DPH, TURI	Expected FY95

STATUTORY DEADLINE	ACTION/DELIVERABLE	RESPONSIBLE PARTY	STATUS
7/1/94	TUR plans completed and certified, plan summaries submitted to DEP.	LQTUs	First summaries received 7/94
1/1/95	Report to Administrative Council on Massachusetts experience with TURA and how it relates to chemical restrictions. Council shall file copy with Clerks of House and Senate and Joint Committee on Natural Resources and Agriculture and hold a public hearing.	TURI Admin. Council	Expected 1/1/95
9/1/94 and annually thereafter	Compile goals of all TUR plans.	DEP	Expected December 1994
1/1/95 and annually thereafter	Report comparing Large Quantity Toxics Users' goals stated in the Plans to statewide 50% reduction in byproduct goal filed with Administrative Council, Clerks of the House and Senate, and the Joint Committee on Natural Resources and Agriculture.	DEP	Expected 1/1/95
7/1/95 and annually thereafter	Promulgate regulations identifying "priority user segments" that are priorities for achieving TUR. Regulations shall be based on recommendations from OTA and DEP, and developed in consultation with TURI. Designation lasts for five years, no more than 3 segments can be designated per year.	Admin. Council, OTA, DEP, TURI	Expected 1995
7/1/95 on	May Promulgate regulations broadening the reporting requirements for facilities in priority user segments to include small quantity toxics users and toxics users with fewer than 10 FTEs. The latter group may also be required to plan.	DEP	Expected as needed
7/1/95 on	May seek authority from the Administrative Council to promulgate toxics use efficiency standards for facilities in priority user segments.	DEP	Expected as needed
7/1/95 on	May issue administrative orders establishing efficiency standards for individual toxics users within a priority user segment.	DEP	Expected as needed
No date	Review programs and regulations relating to toxics production and use, hazardous waste, industrial hygiene, worker health and safety , public exposure to toxics, and environmental release of toxics to determine how TUR can be promoted and achieved.	All State Agencies	Work begun with Clean State Initiative

ATTACHMENT A (CONT)

STATUTORY DEADLINE	ACTION/DELIVERABLE	RESPONSIBLE PARTY	STATUS
No date	Amend regulations to promote TUR and submit to council recommendations for coordinating with DEP, OTA and TURI.	All State Agencies	Preliminary study in progress
No date and biennially thereafter	Develop multi-media inspection manual and training program for all inspections related to toxics. Wherever feasible inspectors shall be cross trained with other agencies. Agencies may request assistance from TURI.	All State Agencies	Work in progress at DEP; TURA agency crosstraining ongoing

ATTACHMENT B

Office of Technical Assistance

FY95 Plan

Under the Toxics Use Reduction Act, the primary responsibilities of the Office of Technical Assistance are:

-to provide technical assistance to toxics users to assist them in achieving toxics use reduction and in complying with the requirements of TURA and other environmental laws and regulations

-to engage in an outreach program to small businesses required to report and plan under TURA and assist first-time filers with reporting requirements and trade secret submissions

-to coordinate, whenever feasible, with private sector initiatives in toxics use reduction and waste prevention education and technical assistance

These responsibilities will be addressed through the following program activities during FY95.

1. Assist companies with filing and planning requirements under TURA
    - provide reporting and planning assistance to those companies coming into TURA compliance under the Amnesty Program or as a result of DEP inspections
    - hold a series of workshops on Form S filing and TUR planning in conjunction with TURI and DEP to assist new filers or new personnel at existing filers

2. Provide outreach, technical and compliance assistance for companies, with particular attention paid to those companies dealing with the Clean Air Act Amendments
    - Hold workshops on the regulatory requirements of the CAAA including permits, standards and pollution prevention techniques for compliance
    - Provide on-site technical assistance to companies to assist with compliance and implementation of appropriate toxics use reduction techniques
    - Integrate outreach activities with DEP and EPA through regular meetings of coordinating group
    - Facilitate presentation of EPA developed outreach tools such as teleconferences, conferences and workshops
    - Develop general and industry-specific fact sheets on the CAAA
    - Identify and coordinate with relevant trade and professional associations to identify and reach those affected by the Act. Hold joint workshops with appropriate associations to assist their industry sector with CAAA compliance.

-Hold at least three workshops to introduce Clean Air Software program developed by OTA to companies required to complete emission control plans. Provide training for interested DEP and EPA staff.

3. Assess toxics use reduction progress at the facility level

   -Modify operating procedures to collect more indepth information and baseline data at the beginning of OTA's interaction with a facility. Standardize qualitative and quantitative data collection to the extent possible so that it can be aggregated.

   -Assess TURA data for trends in BRIs and ERIs

   -Conduct extensive follow-up with companies which have already received assistance to document TUR progress, identify barriers, quantify reductions and costs associated with the changes

4. Participate in evaluation of TURA progress and effectiveness at the statewide level

   -Work with TURI and DEP to identify,collect and analyze data and information relating to progress toward the statewide goal and the effectiveness of the TUR programs in achieving that goal (EPA grant)

   -Participate in National Roundtable Group,as well as EPA and NEWMOA discussions addressing the question of measuring progress so that there will be consistency in reporting and interpretation of results

5. Continue on-site technical assistance

   -Conduct at least 20 on-site technical assistance visits per month. These include initial and follow-up visits.

   -Give priority to regulatory referrals

   -Identify TUR success stories which can be documented for case studies and other technology transfer activities

   _Identify companies which would be good candidates for demonstration projects

6. Expand scope of financial technical assistance

   -Continue to analyze the TUR fee waiver requests and make recommendations to the Secretary for action

   -Provide on-site technical assistance to companies to assist with evaluation of the costs and savings of proposed P2 projects and for the planning process

   -Investigate potential resources for financing TUR projects and identify potential areas of cooperation with other state and federal programs

- Work with EPA on integration of capital budgeting and total cost assessment into pollution prevention methodology

- Continue work with NEWMOA on joint grant to produce financial curriculum and resource guide

- Offer financial workshops as needed

- Initiate effort to reach CEOs and CFOs on the relationship between capital budgeting and P2 decisions through professional groups, Chambers of Commerce, seminars

7. Continue cross agency training sessions and policy work groups

- Continue DEP/OTA regional training/coordinating sessions on a monthly basis

- Continue participation in the POTW Pretreatment Forum

- Provide training to EPA, POTW and other regulatory personnel as requested

- Participate in policy development/discussion groups at DEP, EPA, NEWMOA and the National Roundtable of State Pollution Prevention Programs

8. Develop and distribute information on toxics use reduction
- Review and update existing materials, develop consistent format,logo,style and graphics for OTA materials

- Develop and produce additional case studies and technical materials

- Further refine mailing list for targetted distribution of materials

- Develop articles for placement in relevant publications

- Develop list of relevant trade and professional publications and newsletters (with deadlines) to facilitate use of other vehicles for dissemination of information, announcements of events, regulatory updates

9. Conduct outreach activities to generate clients for technical assistance, transfer technology, provide regulatory information and address policy issues
- Hold one large statewide conference which would bring together many groups working on pollution prevention activities(academic research, corporate programs, large and small businesses, relevant agencies,etc.)

- Increase dissemination of TUR successes through technology transfer workshops and seminars held on a regional and/or industry specific basis

- -Review TURA plan summaries to assess areas in which technical presentations would be most useful

- -Hold one "hands on" event, such as the Solvents Bazaar

- -Coordinate with EPA on cosponsoring industry specific conferences in addition to the Clean Air Act outreach

- -Conduct integrated events for business which will highlight diverse services available through state and federal agencies, utilities, POTWs, etc.

10.Expand coordination with public and private sector agencies and organizations to facilitate integration of OTA's services into as many areas as possible.

- -Continue work with DEP, TURI, EPA, MWRA,NEWMOA,POTWs

- -Initiate or expand relationship with Office of Business Development, DEP regional service centers, the NIST regional programs, Department of Energy Resources, Bay State Skills Corporation, WasteCap, as well as AIM, SBANE and Chambers of Commerce and trade and professional associations

- -Seek cosponsorship of workshops and conferences whenever possible

11.Participate in the Clean State Program and the operations of the multidisciplinary audit team

- -Assist with audits of 25 state facilities to assess TUR, water and energy use, solid waste, indoor air quality, and procurement opportunities for pollution prevention/resource conservation

- -Assist with development of a program to institutionalize training and procedures

- -Assist with the development of recommendations for the statewide Clean State plan based on experience with audits.

12.Fulfill on-going grant obligations associated with four EPA grants

- -Merrimack River Valley grant due to be completed 12/31/94
- -POTW grant due to be completed 12/31/94
- -Technical assistance to educational institutions, due to begin 10/1/94
- -EPA/DOE NICE3 grant (in cooperation with DOER) - Provide oversight of technical activities associated with the grant.

ATTACHMENT C

THE MASSACHUSETTS
TOXICS USE REDUCTION INSTITUTE

STRATEGIC PLAN:

FISCAL YEAR 1995

1993

University of Massachusetts Lowell

TURI STRATEGIC PLAN -- FY '95

The Toxics Use Reduction Institute Strategic Plan is designed to serve as a guiding document for the work of the Institute. By clearly defining the mission statement, goals, and objectives, the Strategic Plan maps current and future directions and serves as a benchmark for understanding the successes and shortcomings of the Institute. The Strategic Plan is an active document that reflects the work of the Institute, changing with time and the work of the staff.

The Strategic Plan contains the mission statement, goals, and objectives of the Institute. The "mission statement" is an over-arching statement of the purpose of the Institute. The "goals" are broad statements of purpose. The "objectives" are evaluatable actions designed to achieve the goals. The Commonwealth of Massachusetts fiscal year 1995 begins 1 July 1994 and ends 30 June 1995.

MISSION STATEMENT

The Toxics Use Reduction Institute is a multi-disciplinary research, education, and technical support center established at the University of Massachusetts Lowell, by the Massachusetts Toxics Use Reduction Act of 1989. The mission of the Institute is to promote reduction in the use of toxic chemicals or the generation of toxic byproducts in Massachusetts industry and commerce. The Institute works in cooperation with the state Department of Environmental Protection (DEP) and the Office of Technical Assistance (OTA). The Institute will accomplish the mission through education, research, and technical support.

GOALS

To fulfill the mission statement, the Institute has developed ten goals. These goals reflect the mission statement and the need for both strong links outside of the Institute and a sound and healthy internal infrastructure. Without a strong foundation the Institute will be unable to achieve the simplest of goals.

Although not explicitly noted in the goals, though implicit in the work of the Institute, is the goal to produce quality work that is useful to all those using, effected by, or concerned with toxic chemicals.

1. To create an understanding of toxics use reduction in Massachusetts companies that do and do not file under Toxics Use Reduction Act (including manufacturing, service sector, banking, and insurance industries) and workers through conferences, courses, focus groups, presentations, seminars, and workshops.

2. To create an understanding of toxics use reduction in students, teachers, and staff at all levels of education through conferences, courses, curricula for teachers, and workshops.

3. To create an understanding of toxics use reduction in the general public through articles, conferences, courses, radio and television broadcasts, seminars, videotapes, and workshops.

4. To create and enhance the understanding of toxics use reduction in the Commonwealth and the Federal Government through in-service education programs, presentations, and training classes and workshops.

5. To perform basic and applied research on toxics use reduction technologies, processes, and materials, and to actively disseminate the results from this research.

6. To perform research on toxics use reduction methods and policies that can be used by industry or government to foster the successful implementation of toxics use reduction techniques.

7. To actively collect and disseminate information on toxics use reduction to Massachusetts companies and other organizations and individuals involved with toxics use reduction and toxics use reduction-type programs.

8. To develop and implement a concerted strategy for publicizing the concept of toxics use reduction and the work of the Institute.

9. To develop and maintain active relationships with the following organizations and individuals involved with toxics use reduction: representatives of Massachusetts businesses, state, federal, and local agencies, state and federal legislators, regional organizations, labor unions, and public interest groups.

10. To establish a smooth functioning work environment through coordination with the University administration and the development and implementation of internal practices, procedures, and policies.

11. To enhance the organization's long-term stability by diversifying Institute funding sources and project work.

GOAL #1 – OBJECTIVES

Goal #1 To create an understanding of toxics use reduction in the business, manufacturing, service sector, and labor communities through conferences, courses, focus groups, presentations, seminars, and workshops.

Objectives

1. Teach two TUR planning courses
2. Host one TUR planning curriculum workshop
3. Teach two TUR planning refresher sessions
4. Host one TUR planing conference
5. Perform a TUR planning course impact evaluation
6. Publish three TUR planning newsletters
7. Maintain a TUR planning hotline
8. Teach twenty TUR planning continuing education workshops
9. Work with DEP and OTA on TUR reporting workshops
10. Host three industry sector focus groups

GOAL #2 – OBJECTIVES

Goal #2 To create an understanding of toxics use reduction in the higher education community including faculty, students, staff and administration.

Objectives

1. Participate in the Pollution Prevention Consortium of New England Universities
2. Create a master's degree in TUR at UMass Lowell
3. Establish a TUR project for higher education
4. develop and deliver one TUR course at UMass Lowell

GOAL #3 – OBJECTIVES

Goal #3	To create an understanding of toxics use reduction in the general public through articles, conferences, courses, radio and television broadcasts, seminars, videotapes, and workshops.

Objectives

1. Host one environmental leaders conference
2. Maintain an in-house TUR speaker package of slides, overheads, and videos for staff speaking engagements

GOAL #4 – OBJECTIVES

Goal #4	To create and enhance the understanding of toxics use reduction in the Commonwealth and the Federal Government through in-service education programs, presentations, and training classes and workshops.

Objectives

1. Participate in the training of managers and inspectors at DEP through workshops and courses

GOAL #5 – OBJECTIVES

Goal #5	To perform basic and applied research on toxics use reduction technologies, processes, and materials, and to actively disseminate the results from this research.

Objectives

1. Service 50 companies through the Surface Cleaning Lab
2. Publish 10 cleaning case studies based on experiences in the Surface Cleaning Lab
3. Enhance cleaning capabilities of the Surface Cleaning Lab
4. Plan for making the Surface Cleaning Lab self-funding
5. Update cleaning technologies vendor guide
6. Fund two technical research projects at UMass Lowell
7. Fund three technical research projects at Massachusetts companies
8. Establish a technology demonstration center
9. Fund one project in microscale chemistry education and demonstration

GOAL #6 – OBJECTIVES

Goal #6 To perform research on toxics use reduction methods and policies that can be used by industry or government to foster the successful implementation of toxics use reduction techniques.

Objectives

1. Measure state-wide progress in toxics use reduction
2. Develop methodology for performing in-plant substitution analyses
3. Assess the socio-economic impacts of chemical restriction policies
4. Complete the second legislatively mandated report on chemical restrictions
5. Fund one methods/policy research project at UMass Lowell
6. Produce three reports based on an analysis of the TURA data
7. Evaluate the feasibility and effectiveness of product chain communication

GOAL #7 – OBJECTIVES

Goal #7 To actively collect and disseminate information on toxics use reduction to Massachusetts companies and other organizations and individuals involved with toxics use reduction and toxics use reduction-type programs.

Objectives

1. Collect and organize 60 documents per week in the Technology Transfer Center
2. Keep the Technology Transfer Center TUR documents database current
3. Send technical information mailings to three industry sectors
4. Respond to over 400 information requests
5. Write three journal articles relevant to TUR

GOAL #8 – OBJECTIVES

Goal #8 To develop and implement a concerted strategy for publicizing the concept of toxics use reduction and the work of the Institute.

Objectives

1. Give 85 presentations on TUR at conferences, workshops, and seminars
2. Publish three *TURA Reports*
3. Generate five press releases
4. Generate 10 newspaper articles on TURI and TURA
5. Publish one annual report
6. Publish one strategic plan
7. Publish four quarterly status reports

GOAL #9 -- OBJECTIVES

Goal #9 To develop and maintain active relationships with the following organizations and individuals involved with toxics use reduction: representatives of Massachusetts businesses, state, federal, and local agencies, state and federal legislators, regional organizations, labor unions, and public interest groups.

Objectives

1. Solicit input on TURI work from the Institute's Industry Advisory Committee
2. Solicit input on TURI work from the Institute's Public Interest Advisory Committee
3. Participate in the TURA Advisory Board by attending Board meetings
4. Participate in the TURA Administrative Council by attending Council meetings
5. Assist the Executive Office Environmental Affairs in establishing a science advisory board
6. Meet with industry to discuss research needs
7. Hold labor advisory committee meeting

GOAL #10 -- OBJECTIVES

Goal #10 To establish a smooth functioning work environment through coordination with the University administration and the development and implementation of internal practices, procedures, and policies.

Objectives

Work with UMass Lowell Administration

1. Process contracts and purchase requisitions required by the university
2. Coordinate hiring, personnel issues, and payrolls with the university
3. Communicate with the university through meetings, memos, and letters

Facilitate TURI Work -- Administrative Cluster Responsibilities

1. Answer phones, handle mail, and maintain office equipment and supplies
2. Maintain Institute financial accounting system
3. Achieve acceptable staffing levels
4. Update Policies and Procedures Manual
5. Identify office equipment and office service needs
6. Produce information sheet on answers to frequently asked administrative questions
7. Identify Institute perceptions of Administrative Cluster
8. Review and revise Administrative Cluster job descriptions

Facilitate TURI Work -- Inter-Cluster Responsibilities

1. Maintain computer system
2. Maintain TURI mailing list database
3. Refine project management process
4. Perform annual staff evaluations
5. Enhance public speaking skills through internal workshops
6. Hold weekly staff meetings
7. Hold weekly policy and planning meetings

STRATEGY FOR IMPLEMENTING DEP's PORTIONS OF THE TOXICS USE REDUCTION ACT

BACKGROUND

TURA Goals and Approach

Using non-toxic or less-toxic chemicals, or using chemicals as efficiently as possible, reduces the amount and/or toxicity of toxic substances that end up as pollution in the environment or waste that must be treated. Consequently, there is less risk to workers, the environment and public health.

TURA encourages companies to implement strategies that eliminate or reduce the use of toxic chemicals, and to operate as efficiently as possible to reduce the generation of toxic waste. TURA also strives to make TUR and/or pollution prevention the preferred means that all facilities use to comply with environmental discharge or emission standards. To measure progress toward these philosophical goals, TURA has one quantifiable objective: to reduce the amount of toxic waste generated statewide by 50% by the year 1997 through the use of TUR.

The law seeks to accomplish its goals by "steering" rather than "rowing". It is based on the assumption that TUR efforts are in firms' own economic interests. Indeed, experience has shown that companies with aggressive TUR programs are able to reduce pollution and improve their economic competitiveness. TURA uses reporting and planning requirements to help change how firms think about the costs of chemical use and the advantages of TUR. These requirements call on firms to engage in a process, but no facility-specific results are dictated.

DEP Responsibilities

Although DEP, as well as other entities, have responsibilities under TURA, one of the most important differences between TURA and "traditional" environmental laws is that TURA relies more on the good faith and creativity of regulated community for its "success" than most other environmental laws. DEP's responsibilities under TURA are not "command and control". Instead of requiring facilities to install equipment or achieve standards, DEP's responsibility is to create an atmosphere that promotes TUR and pollution prevention. In addition, TURA relies on other entities to create this atmosphere. The Office of Technical Assistance (OTA) provides technical assistance; the Toxics Use Reduction Institute (TURI) spearheads research; and the Administrative Council provides leadership for the whole state. DEP, OTA, TURI, and the Council must work together to promote TUR.

The programs that TURA requires DEP to implement help create a "TUR-friendly" atmosphere. They do this in two ways--1) by creating an infrastructure that assists facilities in their efforts to identify and implement TUR, and 2) by changing the way DEP itself "does business" so as to favor TUR and pollution prevention strategies over traditional pollution control as the means of compliance with all environmental laws. The first way --creating an infrastructure--directly benefits facilities regulated under TURA by creating programs (eg., reporting, planning, waivers) designed to assist facilities in their TUR efforts. The second way--changes in how DEP does business--potentially encourage all BWP-regulated facilities, not just TURA-regulated facilities, to implement TUR. Thus, the second way reaches farther than the first, and, in that sense, complements the first very well.

IMPORTANT MESSAGES

- TURA is about both use reduction and waste (byproduct) reduction.
- The 50% byproduct reduction goal is a statewide goal, not an individual facility standard.
- TURA reporting and planning can and has identified successful TUR opportunities.
- TURA can save business money.

To be successful, DEP must:

- Communicate clearly to the public and regulated community about agency/entity roles and responsibilities.
- Communicate effectively about successes in implementing TURA.
- Communicate it's commitment to implement TURA.
- Reassure the business community that they won't be unfairly compared to other companies/industries.
- Reaffirm DEP's committment to make TURA the preferred means of compliance.

HOW DEP WILL ENSURE PROGRESS UNDER TURA

DEP will ensure progress under TURA through several strategies described below. As part of these strategies, DEP will implement the reporting and planning requirements, recommend chemicals for listing and delisting, track and publicize progress toward the goals of the Act, identify measures to increase progress if necessary, and recommend "priority user segments". In addition, DEP will continue to promote prevention, rather than treatment, as the preferred approach to environmental protection in all its programs.

ensure that, where possible, they encourage TUR and P2, and that they do not create unnecessary barriers to TUR and P2. To that end, DEP will continue to do the following:

Fully Implement the BWP Organizational Changes. DEP has initiated a number of organizational changes designed to institutionalize a multi-media / pollution prevention view. In the regional offices, individual program section were consolidated into functional groups addressing permitting and compliance/enforcement for BWP. A new meeting structure has been implemented to reinforce the institutional changes.

For the Boston office, DEP has created an Office of Program Integration which has established coordination teams for Bureau-wide permitting, regulation/policy and training. The next step will be to create teams for reporting and to address "non-facilities" (activities or uses not typically regulated under our traditional programs).

Implement the "Whole Facility" approach. Evidence shows that looking at the "whole facility" rather than individual waste streams is an effective way of identifying TUR opportunities. To that end, DEP has taken steps to orient its existing BWP programs toward the "whole facility" approach. These steps include creating the Office of Program Integration (OPI) within BWP, and developing multi-media, process-orientated inspections.

Build P2 into Compliance and Enforcement. This includes working with OTA to train DEP inspectors in identifying P2 opportunities, building identification of P2 opportunities into inspections, developing standard language for cover letters accompanying enforcement documents suggesting that companies contact OTA. DEP is currently developing an "alternative penalty policy" designed to provide a further economic incentive for companies to use P2 to return to compliance, and standard enforcement documents and policies that encourage unpermitted facilities to explore TUR/P2 options as the first step in their compliance strategy. In addition, DEP must continue to train inspectors in the many aspects of P2.

Ensure that Regulations and Policies Encourage Prevention wherever possible. DEP is currently developing "waiver regulations" whereby facilities that use toxic chemicals regulated under TURA can apply for temporary waivers of other DEP regulations if they are implementing TUR strategies. DEP is also implementing a "Prevention Permitting Pilot Project" designed to identify barriers to P2 in permitting.

DEPARTMENT OF ENVIRONMENTAL PROTECTION FY 95 TURA STRATEGIC PLAN SEPTEMBER 1994

NOTE: BOLDED, CAPITALIZED ITEMS ARE DELIVERABLES
BOLDED ITEMS IN PARENTHESES REQUIRES MIS SUPPORT

Month	User Segments/ Priority User Segments	Compliance	Data Release (use and planning data)	Measuring Progress	Waiver Regulations	Misc. Policies & Regulations (see list below)	Certification	Coordination
DONE TO DATE	-background research -work begun to establish a technical work group to assist DEP in reg. development and to act as an ad hoc committee of the TUR Advisory Board	-enforcement policy developed -file review completed -statistically significant inspection protocol developed and implemented -Level B inspections piloted -NONs, Consent Orders, and NEC's issued	-all complete reports and plan summaries entered and initial QA/QC -"report analysis" reports programmed **(-"reporting" automatic data review completed)**	-preliminary interagency discussions on program evaluation criteria -participate in TURA program evaluation project	-internal issue paper prepared -initial internal review by permitting team completed		-302 certified turps	-Participate in BWP/OPI teams -Support Council and Board -Participate in EPA work groups -Participate in OTA/TURI/DEP/ Council meeting
September	**-USER SEGMENT ISSUE PAPER PREPARED** -first meeting of Advisory Board's ad hoc committee	-sample inspections completed -continued enforcement follow up **-STATUS REPORT TO COUNCIL ON COMPLIANCE AND ENFORCEMENT** -identify key TURA facilities for inclusion in FIRST inspection lists	-obtain plan summary corrections from all LQTUs -obtain Form S corrections -continue data entry for late filings and corrections **(-plan summary analytical reports developed and debugged)**	-participate in TURA program evaluation project			-continuing ed discussions - **CERTIFICATIONS ISSUED**	"

SPECIFIC STRATEGIES

Strategy #1 Evaluating the LQTU Universe

The effectiveness of the core TURA programs (eg. reporting and planning) depends on the "appropriateness" of the LQTU universe. DEP will evaluate the appropriateness of this universe along two dimensions--specific chemicals and specific processes. This includes the following programs:

Providing Support for the Listing/Delisting process. Under TURA, facilities can petition the Administrative Council to list or delist specific chemicals. DEP will assist the Council in assessing these requests. DEP plans to consider TURA data and other information from industries to inform the listing/delisting process.

Continued Development of Policies, Procedures and Guidance documents that clarify programmatic requirements with respect to specific processes and uses of chemicals. This includes considering how to appropriately apply TURA requirements in specific instances in order to effectively promote the philosophy behind TURA, including developing procedures for doing so.

Strategy #2: Ensuring that All Large Quantity Toxics Users Report and Plan

The TURA program is based on the presumption that when firms make a good faith effort to evaluate their toxic chemical use and identify TUR options they voluntarily implement TUR. Therefore one of the most effective ways to achieve the goals of TURA is to ensure that reports are accurate, and plans are "well-done". To that end, DEP will implement the following programs:

A Comprehensive Compliance and Enforcement program designed to "level the playing field" by ensuring that everyone is "in the system". Specifically, DEP will continue to find "non-filers" through FIRST screening inspections, reviewing other programs' data bases, and continued publicity about the program. DEP is also currently implementing its "TURA Amnesty" program, which combines providing incentives for non-filers to voluntarily enter the system with the strategies for finding non-filers mentioned above.

Guaranteeing the Quality of Reports and Plans through report and plan review, and through the TURP certification program. DEP currently reviews reports to ensure that facilities understand the concepts of TURA. DEP will evaluate its current procedures and recommend a report review strategy for FY95. DEP will develop a strategy for plan summary review, and for targeting full plan audits in the field. The strategy will include provisions for taking appropriate enforcement for non-compliance. In developing the strategy, DEP will obtain input from the Administrative Council. (See Strategy #3 for more detail.)

TURPs are directly responsible for ensuring that plans are adequate. DEP intends to use the plan review process as another check on the adequacy of plans, and on the effectiveness of the TURP certification program itself.

Strategy # 3: Effectively Use Reporting, Planning and Other Data

TURA data provides both facility-wide and process-level information about chemical use and waste. The data is useful for a variety of reasons. It provides a basis for DEP, OTA, and TURI to target technical assistance and research needs, it provides information to the public, and it is one of several indicators of progress toward the 50% byproduct reduction goal. In order to effectively use TURA data, DEP will implement the following programs.

DEP will evaluate data release procedures in order to make data publicly available in a timely fashion. DEP will release data from the July 1, 1993 reports by April 1994. Although our timetable is nearly three months ahead of the federal release of TRI information, DEP will evaluate the way it approaches reporting data to see if improvements can be made. DEP will review its procedures for data release and seek input from the Administrative Council on possible changes.

DEP will ensure that trade secret claims are appropriately protected. Because of the unique nature of the information in the reports and plans, many facilities are especially concerned about inappropriate release of this information. DEP is committed to ensuring that trade secret claims are appropriately protected. DEP is also committed to ensuring the public's right of access to information not protected as trade secrets. DEP will continue to fulfill both of these important responsibilities.

DEP will assist the Program in measuring progress toward the statutory 50% byproduct reduction goal. Measuring progress is an important and complex issue. Under TURA, progress is measured from a base year of 1987. DEP has data in a variety of sources, not just the LQTU reports, which may be used as effective indicators of progress. The information may also be used by DEP, OTA, and TURI to target program activities, technical assistance and research efforts.

DEP will use information from all of its programs to promote TURA. DEP collects data about chemical use and/or release through many of its programs, not just TURA. TURA requires DEP to coordinate this information. By more effectively using information from all its programs, DEP will be able to better promote TUR.

DEP will develop user segment regulations.
TURA directs DEP to develop regulations for classifying processes into user segments. TURA also allows the Administrative Council to designate up to 3 priority user segments each year based on the recommendations of DEP or OTA. DEP's approach to user segments is designed to allow maximum flexibility in setting segments, so that the Council can, by identifying priority user segments, best target TURA. Prioritization can be used to address particular environmental problems (such as VOCs, or RCRA wastes that cannot be treated in state or particularly toxic chemicals), to identify industrial segments that are not using TUR to full benefit, and to ensure maximum utilization of successful TURA strategies.

Strategy #4 Incorporate TUR and Pollution Prevention (P2) into DEP's Existing Programs

In implementing TURA's goal of "making TUR the preferred means of compliance" DEP must continue to evaluate and change its current waste prevention programs to

Month	User Segments/ Priority User Segments	Compliance	Data Release (use and planning data)	Measuring Progress	Waiver Regulations	Misc. Policies & Regulations (see list below)	Certification	Coordination
October	-PRELIMINARY LIST OF USER SEGMENT DESCRIPTORS PREPARED -second meeting of Advisory Board's ad hoc committee	-follow up enforcement actions	-review and enter corrections and late filings -send reports to TOP 20 reporters for QA/QC -begin data analysis -begin trade secret review (-"extract report" debugging completed)	-participate in TURA program measurement project		-assist with listing/delisting		"

Month	User Segments/ Priority User Segments	Compliance	Data Release (use and planning data)	Measuring Progress	Waiver Regulations	Misc. Policies & Regulations (see list below)	Certification	Coordination
November	-FINAL LIST OF USER SEGMENT DESCRIPTORS AVAILABLE	-follow up enforcement actions	-final data clean and entry -TRADE SECRET APPROVAL MEMO -STORY BOARDS PREPARED -EXTRACT OF 1993 DATA PRODUCED -HARD COPY OF 1993 DATA PRODUCED -initiate Electronic Data Input Project? pending supplemental budget	-participate in TURA program evaluation project		-PLAN AUDIT REQUEST PROCEDURES -assist with listing delisting	-PROCEDURES FOR OBTAINING CONTINUING EDUCATION CREDIT DEVELOPED - CERTIFICATIONS ISSUED	"
December	-DRAFT REGS TO ADVISORY BOARD FOLLOWED BY COUNCIL FOLLOWED BY SECRETARY OF STATE	-follow up enforcement actions	-enter corrections	-participate in TURA program evaluation project	-WAIVER AD HOC ADVISORY COMMITTEE ESTABLISHED	begin work on other policies and regulations including -BYPRODUCT AS PRODUCT -PLAN UPDATE REGS -REPORTING & PLANNING POLICIES -assist with listing/delisting	- CERTIFICATIONS ISSUED -COURSES APPROVED FOR CONTINUING EDUCATION CREDIT	"

ATTACHMENT D (CONT)

Month	User Segments/ Priority User Segments	Compliance	Data Release (use and planning data)	Measuring Progress	Waiver Regulations	Misc. Policies & Regulations (see list below)	Certification	Coordination
January	-PUBLIC HEARINGS -REGULATIONS PROMULGATED -work on priority user segments	-begin development of TURA component of the LEVEL A facility audits	-enter corrections -UPDATED EXTRACTS FOR 1990-1992 AVAILABLE	-EVALUATION OF PROGRESS TOWARD 50% BYPRODUCT REDUCTION GOAL PREPARED FOR COUNCIL AND LEGISLATURE -participate in TURA program evaluation project	-ISSUE PAPER PREPARED FOR INTERNAL AND EXTERNAL REVIEW -first ad hoc advisory committee meeting	"	-EXAM OFFERED - TURPS CERTIFIED -COURSES APPROVED FOR CONTINUING EDUCATION CREDIT	"
February	(-establish regulated object classification for user segments in TURA data system) -SURVEY LOTUS TO ID PRODUCTION PROCESSES USED -work on priority user segments	-continue development of TURA component of level A audit	-enter corrections	participate in TURA program evaluation project	-continued ad hoc committee meetings		-EXAM GRADED -TURPS CERTIFIED -COURSES APPROVED FOR CONTINUING EDUCATION CREDIT	"

Month	User Segments/ Priority User Segments	Compliance	Data Release (use and planning data)	Measuring Progress	Waiver Regulations	Misc. Policies & Regulations (see list below)	Certification	Coordination
March	-begin user segment data entry -REVISIONS TO FORM S REPORTING PACKAGE -develop training material -work on priority user segments	-continue development of TURA component of level A audit	-enter corrections	-participate in TURA program evaluation project	-Continued Advisory Committee Meetings -Continued Issue paper development and Permit Team review	"	-EXAMINEES NOTIFIED OF RESULTS -TURPS CERTIFIED -COURSES APPROVED FOR CONTINUING EDUCATION	"
April	-USER SEGMENTS PRODUCTION PROCESSES ENTERED INTO DATA SYSTEM -work on priority user segments	-TURA COMPONENT OF LEVEL A FACILITY AUDIT COMPLETED -develop audit training	-enter corrections	-participate in TURA program evaluation project	-PRELIMINARY DRAFT REGULATIONS DEP PERMITTING TEAM	"	-TURPS CERTIFIED -COURSES APPROVED FOR CONTINUING EDUCATION CREDIT	"
May	-work on priority user segments	-LIST OF COMPANIES THAT FILED TRI WITH EPA BUT NOT DEP DEVELOPED -provide audit training	-enter corrections	-participate in TURA program evaluation project	-PRELIMINARY DRAFT REGULATIONS TO AD HOC COMMITTEE	"	-TURPS CERTIFIED -COURSES APPROVED FOR CONTINUING EDUCATION CREDIT	"

ATTACHMENT D (CONT)

Month	User Segments/ Priority User Segments	Compliance	Data Release (use and planning data)	Measuring Progress	Waiver Regulations	Misc. Policies & Regulations (see list below)	Certification	Coordination
June		-NEC FOR EPA TRI FILERS SENT OUT -conduct some audits	-enter corrections		-DRAFT REGULATIONS TO ADVISORY BOARD AND COUNCIL	"	-EXAM OFFERED -TURPS CERTIFIED -COURSES APPROVED FOR CONTINUING EDUCATION CREDIT	"
July			-log in reports and report contents -begin data entry		-DRAFT REGULATIONS TO SECRETARY OF STATE		-EXAM GRADED -TURPS CERTIFIED -COURSES APPROVED FOR CONTINUING EDUCATION CREDIT	"
August	-work on priority user segments		-complete data entry -identify file review enforcement cases -issue enforcement & correction letters		-PUBLIC HEARINGS -PROMULGATION	"	-EXAMINEES NOTIFIED OF RESULTS -TURPS CERTIFIED -COURSES APPROVED FOR CONTINUING EDUCATION CREDIT	"
Future					-staff training	PLAN UPDATE REGULATIONS	-RECERT. REGULATIONS PROMULGATED AND FORMS DEVELOPED	"

ATTACHMENT E

OFFICE OF TECHNICAL ASSISTANCE

Personnel Breakdown by Fiscal Year

Fiscal Year 91:

OTA STAFF:

Program Manager VI	Barbara Kelley
Regional Planner IV	Rich Reibstein
Environmental Engineer V (EPA grant)	Tim Greiner
Environmental Engineer IV	Paul Richard
Environmental Engineer II	Mitchell Kennedy

CONTRACT EMPLOYEES:

Environmental Engineer IV	Kathy Porter
Environmental Engineer III	Joe Paluzzi
Environmental Analyst	Rich Bizzozero
Technical Writer(part time)	Talbot Brewer

Fiscal Year 92:

OTA STAFF:

Program Manager VI	Barbara Kelley
Environmental Analyst V	Rick Reibstein
Environmental Engineer V	William McGowan
Environmental Engineer IV	Paul Richard
	William Griffin
	Scott Fortier
Environmental Analyst IV	Ken Soltys
	Richard Bizzozero
Environmental Engineer III	Mitchell Kennedy
	Alan Buckley
	Joe Paluzzi
Environmental Analyst III	Lisa Dufresne
	Anne Reynolds
Environmental Engineer II	David Geschwind
Environmental Analyst II	Hazrat Noorzad
Program Coordinator II	Grace Caner Offen
Clerk IV	Audrey Tyler Casey

CONTRACT EMPLOYEES:

Financial Analyst	Marlene Wittman
Environmental Analyst(EPA grant)	Lori Thayer
Environmental Analyst	Janet Hartke-Bowser
Environmental Engineer(Part time)	Tim Greiner
Technical Writer (Part time)	Talbot Brewer
Intern Engineers	Marina Gayl
	Roland Beaudette
	Jennifer Hunt
	Robin Heafey
	Michael Scholand
	Saber Ayadi

ATTACHMENT E

EOEA STAFF:

Counsel	Jamy Buchanan
Ombudsman	Sally Reid

Fiscal Year 93:

OTA STAFF:

Program Manager VI	Barbara Kelley
Environmental Analyst V	Rick Reibstein
Environmental Engineer V	William McGowan
Environmental Engineer IV	Paul Richard
	William Griffin
	Scott Fortier
Environmental Analyst IV	Ken Soltys
	Rich Bizzozero
	George Frantz
Environmental Engineer III	Alan Buckley
	Joe Paluzzi
Environmental Analyst III	Lisa Dufresne
	James Cain
	John Flynn
Environmental Engineer II	David Geschwind
	Marina Gayl
	Roland Beaudette
Environmental Analyst II	Hazrat Noorzad
	Jennifer Hunt
Program Coordinator II	Grace Caner Offen
Financial Analyst	Richard Torborg
Regional Planner IV	Hugh Pilgrim
Systems Analyst III	Kathy Sestrich
Administrative Assistant II	Audrey Tyler Casey

CONTRACT EMPLOYEES:

Financial Analyst	Marlene Wittman
Environmental Engineer IV	John Raschko
Information Coordinator	Michael Frishman
Environmental Analyst(EPA Grant)	Lori Thayer
Intern Engineers	Ken Pierce
	Jacob Park
	Donald Wong
	Paul Dambek
	Julie Bolton
	Jim O'Connell
	Sean Thomas
	Pam Sweeney(EPA grant)
	Neil Bergeron(EPA Grant)

EOEA STAFF:

Program Manager IX	Jamy Buchanan
Ombudsman	Sally Reid

Fiscal Year 94:

OTA STAFF:	
Program Manager VI	Barbara Kelley
Environmental Analyst V	Rick Reibstein
Environmental Engineer V	William McGowan
Environmental Engineer IV	Paul Richard
	William Griffin
	Scott Fortier
Environmental Analyst IV	Rich Bizzozero
	Ken Soltys
	George Frantz
Environmental Engineer III	Alan Buckley
	Joe Paluzzi
Environmental Analyst III	Lisa Dufresne
	John Flynn
	James Cain
Environmental Engineer II	David Geschwind
	Marina Gayl
	Roland Beaudette
Environmental Analyst II	Hazrat Noorzad
	Jennifer Hunt
Program Coordinator II	Grace Caner Offen
Program Coordinator III	Susan Altree Lanza
Financial Analyst	Richard Torborg
Regional Planner IV	Hugh Pilgrim
Systems Analyst III	Kathy Sestrich
Administrative Assistant II	Audrey Tyler Casey
Clerk IV/Admin Asst I	Shere Thomas
CONTRACT EMPLOYEES:	
Environmental Engineer IV	John Raschko
Information Coordinator	Michael Frishman
Environmental Engineer(Part time)	Tim Greiner
Technical Writer(Part time)	Talbot Brewer
Environmental Analyst(EPA grant)	Cynthia Barakatt
Intern Engineers	Pam Sweeney(EPA grant)
	Ken Pierce
	Paul Dambek
	Jim O'Connell
	Arun Venkatesh
	Bill McLaughlin(EPA grant)
	Bill Lynch
	Erin Graham(3 mo.)
	Philip Milmoe(data)
EOEA STAFF:	
Program Manager IX	Charles Steele (1/4 yr.)
	Jamy Buchanan (3/4 yr.)

Fiscal Year 95:

OTA STAFF:

Program Manager VI	Barbara Kelley
Environmental Analyst V	Rick Reibstein
Environmental Engineer V	William McGowan
Environmental Engineer IV	Paul Richard
	William Griffin
	Scott Fortier
Environmental Analyst IV	Ken Soltys
	Richard Bizzozero
Environmental Engineer III	Alan Buckley
	Joe Paluzzi
Environmental Analyst III	Lisa Dufresne
	John Flynn
	James Cain
Environmental Engineer II	Marina Gayl
	Roland Beaudette
	Vacant
Environmental Analyst II	Hazrat Noorzad
	Jennifer Hunt
Program Coordinator II	Grace Caner Offen
Program Coordinator III	Susan Altree Lanza
Financial Analyst	Richard Torborg
Environmental Analyst IV	George Frantz
Regional Planner IV	Hugh Pilgrim
Systems Analyst III	Vacant
Administrative Assistant II	Audrey Tyler Casey
Administrative Assistant I	Theresa Freyer

CONTRACT EMPLOYEES:

Environmental Engineer IV	John Raschko
Information Coordinator	Michael Frishman
Environmental Analyst(EPA grant)	Cynthia Barakatt
Intern Engineers	Bill McLaughlin
	Arun Venkatesh
	Thomas Phelps
	Jennifer Fossey
	Michael Maddocks
	Philip Milmoe(data)
	Patrick Monteiro(EPA grant)
	Peter Gagnon(EPA grant)

EOEA STAFF:

Program Manager IX	Jamy Buchanan

MASSACHUSETTS

Executive Office of Environmental Affairs
Office of Technical Assistance
100 Cambridge Street
Boston, MA 02202

FAX: 617 727-3827

	Telephone
Barbara Kelley, Director Office of Technical Assistance	617 727-3260 x680
Audrey Tyler Casey Administrative	617 727-3260 x484
Shere Thomas Administrative	617 727-3260 x484

Policy, Outreach & Special Projects

Rick Reibstein, Assistant Director Director of Policy & Outreach	617 727-3260 x688
Grace Caner Household Hazardous Waste & Education	617 727-3260 x696
George Frantz Special Projects, Clean Air Act	617 727-3260 x631
Michael Frishman, Coordinator Information	617 727-3260 x674
Tim Greiner Engineer, Pollution Prevention Specialist	617 727-3260
Hugh Pilgrim Health & Safety, Special Projects, Clean State	617 727-3260 x660
Kathy Sestrich Computer Services/Information Management	617 727-3260 x691
Dick Torborg Financial Analyst	617 727-3260 x641

Technical Services

Bill McGowan, Director Technical Services	617 727-3260 x682

Special Projects

John Raschko, Team Leader Process Engineer, Petroleum Industry, Pumps	617 727-3260 x698

Northeast

Ken Soltys, Team Leader Chemist, Chemicals, Plastics & Coatings	617 727-3260 x687
John Flynn Physical Chemist, Electronic Manufacturing Materials & Processes	617 727-3260 x676
Marina Gayl Environmental Engineer, Municipal Waste Treatment	617 727-3260 x681

Southeast

Rich Bizzozero, Team Leader Chemist, Plating & Manufacturing	617 727-3260 x684
James Cain Chemical Engineer/MBA, Chemicals & Filtration	617 727-3260 x686
Hazrat Noorzad Chemist, Plating	617 727-3260 x690
James O'Connell Mechanical Engineer, Robotics & Manufacturing	617 727-3260 x697

Central

Bill Griffin, Team Leader Engineer, Non-metallic Materials Processing	617 727-3260 x694
Lisa Dufresne Engineer, Printed Circuit Boards, Cooling Towers	617 727-3260 x638
Jennifer Hunt Engineer, Hospitals	617 727-3260 x683

Metro N-East

Scott Fortier, Team Leader Process Chemist, Adhesives & Coatings, Specialty Chemicals	617 727-3260 x695
Dave Geschwind Manufacturing Engineer, Mechanical, Plastics, Automotive & Machine Design	617 727-3260 x657
Joe Paluzzi Industrial Engineer, Fabrication & Quality Assurance	617 727-3260 x693

Western

Paul Richard, Team Leader Chemist	617 727-3260 x692
Roland Beaudette Engineer	617 727-3260 x659
Alan Buckley Engineer, Powder Metallurgy	617 727-3260 x662

Program Expertise
Kinds of Businesses Visited:
Fabricated metals
Electrical
Chemical
Machinery
Plastics
Printing
Miscellaneous
Other

Process Expertise/Reports Produced
1,1,1 Trichloroethane Reduction & Replacement
Metals Recovery
Acid Reduction
VOC Reduction
Water Recycling/Use Reduction

ATTACHMENT E (

Toxics Use Reduction Institute

STAFF POSITIONS

Fiscal Year 1991

STAFF	POSITION/EMPLOYMENT STATUS
1. Demers, Patrick	Technical Support Coordinator, FP
2. Ellenbecker, Michael	Deputy Director/Associate Director for Research, FP
3. Geiser, Kenneth	Director, FP
4. Griffon, Mark	Program Coordinator/Instructor (TURP),FP
5. Johnson, Beverly	Associate Director for Administration, FP
6. Luskin, Jack	Associate Director for Education and Training, FP
7. Lutts, Judith	Media Specialist, PT
8. Rossi, Mark	Research Associate, FP
9. Thibodeau, Sandra	Administrative Assistant, FP
10. Shapiro, Judith	Curriculum Developer, (TURP), PT
11. Wilcox, Margaret	Curriculum Developer, (TURP), PT

LEGEND

FP = Full-time, (37.5 hours per week), state approved, permanent position of one year or longer
FT = Full-time, non-state approved, temporary position of one year or longer
PP = Part-time, (20 or less hours per week), state approved, permanent position of one year or longer
PT = Part-time, non-state approved, temporary position of one year or longer

The staff positions identified above reflect TURI's core staff only. Core staff positions are those essential to the day-to-day operations of TURI, and in most instances, are state-approved, permanent positions. In addition to these core staff positions, TURI employs temporary staff of short duration, (generally less than one year), to execute certain of its projects as needed. Temporary staff include University Research Fellows, University Student Assistants, Temporary Clerical/Administrative Staff, and Special Project Staff.

Toxics Use Reduction Institute

CONSULTANTS

Fiscal Year 1991

	CONSULTANT	**FUNCTION**
1.	Filmore, Themia Pappas	Graphic Design (TURP)
2.	Lewis, Sanford	Policy Research (TURP)
3.	Morris, Larry	Instruction (TURP)
4.	Richardson, Charles	Policy Research
5.	Woskie, Susan	Technical Research (TURP)

Toxics Use Reduction Institute

STAFF POSITIONS

Fiscal Year 1992

	STAFF	POSITION/EMPLOYMENT STATUS
1.	Basanese, Ann	Program Assistant, FT
2.	Bulko, John	Lab Manager, FT
3.	Butler, Susan	Media Specialist, PT
4.	Clark, Janet	Technical Transfer Center, FT
5.	Demers, Patrick	Technical Support Coordinator, FP
6.	Ellenbecker, Michael	Associate Director for Research, FP
7.	Geiser, Kenneth	Director, FP
8.	Griffon, Mark	Program Coordinator/Instructor(TURP), FP
9.	Harriman, Elizabeth	Research Associate, FP
10.	Hensley, Josephine	Instructional Design Coordinator/Instructor, FP
11.	Johnson, Beverly	Associate Director Administration, FP
12.	Luskin, Jack	Associate Director for Education & Training, FP
13.	Masse, Jeannette	Secretary, FP
14.	Rossi, Mark	Research Associate, FP
15.	Thibodeau, Sandra	Administrative Assistant, FP

LEGEND

FP = Full-time, (37.5 hours per week), state approved, permanent position of one year or longer
FT = Full-time, non-state approved, temporary position of one year or longer
PP = Part-time, (20 or less hours per week), state approved, permanent position of one year or longer
PT = Part-time, non-state approved, temporary position of one year or longer

The staff positions identified above reflect TURI's core staff only. Core staff positions are those essential to the day-to-day operations of TURI, and in most instances, are state-approved, permanent positions. In addition to these core staff positions, TURI employs temporary staff of short duration, (generally less than one year), to execute certain of its projects as needed. Temporary staff include University Research Fellows, University Student Assistants, Temporary Clerical/Administrative Staff, and Special Project Staff.

Toxics Use Reduction Institute

CONSULTANTS

Fiscal Year 1992

	CONSULTANT	FUNCTION
1.	C.F. Technologies	Research/Instruction
2.	Peter Chuang	Media Consultation
3.	Themia Pappas Filmore	Graphic Design (TURP)
4.	Christopher Ford	Instruction (TURP)
5.	Timothy Greiner	Instruction (TURP)
6.	Industrial Economics; Inc.	Policy Research
7.	Richard Kanoff	Advise (TURP Certification)
8.	Jay Kaufman	Policy Research
9.	Charles Levenstein	Policy Research
10.	Sanford Lewis	Policy Research
11.	Frank Marino	Instruction (TURP)
12.	Merrimack College	Research/Instruction
13.	Patricia O'Connell	Instruction (TURP)
14.	Vincent Piekunka	Technology Research
15.	Joel Pointon	Instruction (TURP)
16.	Robert Pojasek	Instruction (TURP)
17.	Research Triangle Institute	Advise (TURI Laboratory)
18.	Marlene Whittman	Instruction (TURP)
19.	Worcester Polytechnic Institute	Instruction (TURP)

Toxics Use Reduction Institute

STAFF POSITIONS

Fiscal Year 1993

	STAFF	POSITION/EMPLOYMENT STATUS
1.	Basanese, Ann	Program Assistant, FT
2.	Bulko, John	Lab Manager, FT
3.	Butler, Susan	Media Specialist, PT
4.	Clark, Janet	Technical Transfer Center, FT
5.	Demers, Patrick	Technical Support Coordinator, FP
6.	Ellenbecker, Michael	Associate Director for Research, FP
7.	Gatta, Johanna	Administrative Assistant, FT
8.	Geiser, Kenneth	Director, FP
9.	Griffon, Mark	Program Coordinator/Instructor(TURP), FP
10.	Harriman, Elizabeth	Research Associate, FP
11.	Hensley, Josephine	Instructional Design Coordinator/Instructor, FP
12.	Johnson, Beverly	Associate Director Administration, FP
13.	Luskin, Jack	Associate Director for Education & Training, FP
14.	Rossi, Mark	Research Associate, FP
15.	Whiting, Evelyn	Secretary, FT

LEGEND

FP = Full-time, (37.5 hours per week), state approved, permanent position of one year or longer
FT = Full-time, non-state approved, temporary position of one year or longer
PP = Part-time, (20 or less hours per week), state approved, permanent position of one year or longer
PT = Part-time, non-state approved, temporary position of one year or longer

The staff positions identified above reflect TURI's core staff only. Core staff positions are those essential to the day-to-day operations of TURI, and in most instances, are state-approved, permanent positions. In addition to these core staff positions, TURI employs temporary staff of short duration, (generally less than one year), to execute certain of its projects as needed. Temporary staff include University Research Fellows, University Student Assistants, Temporary Clerical/Administrative Staff, and Special Project Staff.

ATTACHMENT E (CONT)

Toxics Use Reduction Institute

CONSULTANTS

Fiscal Year 1993

CONSULTANT	FUNCTION
1. Boston Area Educators for Social Responsibility	Middle School Curriculum Development
2. C.F. Technologies	Laboratory Consultation
3. Chris Ford	Instruction (TURP)
4. Terri Goldberg	Instruction (TURP)
5. Timothy Greiner	Instruction (TURP)
6. Industrial Economics	Policy Research
7. Nicolas Kaufman	Media Consultation
8. Mitch Kennedy	Technology Research
9. Mitch Kennedy	Instruction (TURP)
10. Sanford Lewis	Policy Research
11. Ray Lizotte	Instruction (TURP)
12. Mabbet & Associates	Technology Research
13. Frank Marino	Instruction (TURP)
14. Hugh McClaughlin	Reviewer, Matching Grants Program
15. Merrimack College	Research/Instruction
16. Larry Morris	Instruction (TURP)
17. Leland Miner	Instruction (TURP)
18. National Environmental Policy Law Center	Policy Research
19. Patricia O'Connell	Instruction (TURP)
20. Robert Pojasek	Instruction (TURP)
21. Linda Pratt	Reviewer, Matching Grants Program
22. Edward Surette	Instruction (TURP)
23. Kenneth Tierney	Instruction (TURP)
24. Marlene Whitman	Instruction (TURP)
25. Worcester Polytehnic Institute	Instruction (TURP)

Toxics Use Reduction Institute

STAFF POSITIONS

Fiscal Year 1994

STAFF	POSITION/EMPLOYMENT STATUS
1. Basanese, Anne	Program Assistant, FT
2. Bulko, John	Laboratory Manager, FT
3. Butler, Susan	Media Specialist, PT
4. Clark, Janet	Technical Transfer Center Manager, FT
5. Demers, Patrick	Technical Support Coordinator, FP
6. Dorris, Tim	Office Clerk, PT
7. Ellenbecker, Michael	Deputy Director/Associate Director for Research, FP
8. Fox, Robert	Planner/Trainer, FT
9. Gatta, Johanna	Administrative Assistant, FT
10. Geiser, Kenneth	Director, FP
11. Griffon, Mark	Program Coordinator/Instructor (TURP), FP
12. Harriman, Elizabeth	Research Associate, FP
13. Hensley, Josephine	Instructional Design Coordinator/Instructor, FP
14. Johnson, Beverly	Associate Director for Administration, FP
15. Luskin, Jack	Associate Director for Education and Training, FP
16. Rossi, Mark	Research Associate, FP
17. Siegel, Jodie	Planner/Trainer, FP
18. Stanford, Donna	Bookkeeper, FP
19. Tivnan, Robert	Planner/Trainer, FT
20. Whiting, Evelyn	Receptionist/Secretary, FP

LEGEND
FP = Full-time, (37.5 hours per week), state approved, permanent position of one year or longer
FT = Full-time, non-state approved, temporary position of one year or longer
PP = Part-time, (20 or less hours per week), state approved, permanent position of one year or longer
PT = Part-time, non-state approved, temporary position of one year or longer

The staff positions identified above reflect TURI's core staff only. Core staff positions are those essential to the day-to-day operations of TURI, and in most instances, are state-approved, permanent positions. In addition to these core staff positions, TURI employs temporary staff of short duration, (generally less than one year), to execute certain of its projects as needed. Temporary staff include University Research Fellows, University Student Assistants, Temporary Clerical/Administrative Staff, and Special Project Staff.

Toxics Use Reduction Institute

CONSULTANTS

Fiscal Year 1994

CONSULTANT	FUNCTION
1. Nancy Fratoni	Instruction, (TURP)
2. Sarah Gibson	Instruction, (TURP)
3. Terri Goldberg	Instruction, (TURP)
4. Sharon Johnson	Instruction, (TURP)
5. Mitchell Kennedy	Instruction, (TURP)
6. Raymond Lizotte	Instruction, (TURP)
7. Frank Marino	Instruction, (TURP)
8. Richard Michelson	Instruction, (TURP)
9. Leland Miner	Instruction, (TURP)
10. Samuel Perkins	Instruction, (TURP)
11. Joel Pointon	Instruction, (TURP)
12. Gary Siegel	Instruction, (TURP)
13. Kenneth Tierney	Instruction, (TURP)
14. Merrimack College	Technology Research/Instruction
15. Harvard University	Policy Research
16. Tellus Institute	Policy Research
17. Industrial Economics, Inc.	Policy Research
18. Worcester Polytechnic Institute	Instruction, (TURP)

DEP TURA PROGRAM STAFFING FACT SHEET
(AS OF 8/94)

CURRENTLY 18 POSITIONS ARE AUTHORIZED WITHIN DEP FOR THE TURA PROGRAM. THERE ARE ALSO A NUMBER OF ADDITIONAL POSITIONS WHICH CONTRIBUTE TO THE TURA PROGRAM AT DEP WHICH ARE ALSO DESCRIBED BELOW.

DEP TURA FUNDED POSITIONS

GROUP 1: 7 POSITIONS RESPONSIBLE FOR DEVELOPMENT OF INFRASTRUCTURE FOR LARGE QUANTITY TOXIC USERS (Regulatory Development, Reporting by LTQUs, Toxic Use Reduction Planner Certification, etc.)

ENVIRONMENTAL ANALYST VI - PROGRAM MANAGER OF THE TOXICS USE PROGRAM IN BWP DIVISION OF HAZARDOUS MATERIALS (SUZI PECK)
Duties: Overall management responsibility for development of the regulatory infrastructure for Large Quantity Toxic Users.

REGIONAL PLANNER IV (CYNTHIA CHAVES)
Duties: Development of policy and regulations. Currently working on policy development, waiver regulations, technical assistance, etc.

ENVIRONMENTAL ANALYST IV (SUSAN GREEN)
Duties: Program Development. Currently assigned to listing/delisting regulations, user segment regulations, LQTU data analysis, etc.

REGIONAL PLANNER III (TRACY KLAY)
Duties: Responsible for management of Toxic Use Reduction Planner Certification Program and LTQU compliance.

REGIONAL PLANNER II (LYNN HEISEY)
Duties: Responsible for quality control and analysis of LTQU data and support of the Northeast Region Pollution Prevention Permit Pilot Project.

PLANNING ASSISTANT (WALTER HOPE)
Duties: LTQU data input/quality control and general program administrative assignments.

COUNSEL II (ALISSA KATZ)
Duties: Provides legal support to TURA program and Division of Hazardous Materials.

GROUP 2: 5 POSITIONS RESPONSIBLE FOR PROVIDING REGIONAL OPERATIONS SUPPORT TO FIRST INSPECTIONS, TURA PLAN INSPECTIONS, TURA AMNESTY AND OTHER COMPLIANCE INITIATIVES.

FIVE REGIONAL PLANNER IVs (SANDRA HURLBUT, CARL NATHO, ROBERTA BAKER, MARTHA CALDWELL, ANITA BALTZERSEN)

GROUP 3: 6 POSITIONS RESPONSIBLE FOR MAKING TOXIC USE REDUCTION THE PREFERRED MECHANISM FOR ACHIEVING COMPLIANCE WITH ALL THE ENVIRONMENTAL PROTECTION LAWS AND REGULATIONS FOR WHICH DEP IS RESPONSIBLE

REGIONAL PLANNER V - OPI COMPLIANCE/ENFORCEMENT COORDINATOR (DOUG FINE)

Duties: Statewide coordination of Prevention Biased Compliance and Enforcement program including FIRST (Facilitywide Inspections to Reduce Sources of Toxics), TURA plan inspections, TURA Amnesty and related compliance initiatives. Program and policy development including development of new FIRST protocols which include compliance inspections for TURA reporting and TURA planning.

REGIONAL PLANNER IV - OPI TRAINING COORDINATOR (STEVE EDELHEIT)

Duties: Statewide training of BWP staff with emphasis on development of skills needed for implementation of prevention based compliance, regulatory integration, and prevention based permitting.

ENVIRONMENTAL ANALYST V - INDUSTRIAL WASTEWATER PROGRAM (GENE ROMERO)

Duties: Work with Local officials at Publicly Owned Treatment Works to integrate TURA concepts into their industrial pretreatment programs. DEP lead for implementation of MWRA delegation which includes requirement that all industrial pretreatment permit and enforcement staff get TURP training and coordinate with DEP FIRST program. Work on critical policies such as Zero Discharge Policy.

ENVIRONMENTAL ANALYST V - OFFICE OF ENFORCEMENT (GERI LAMBERT)

Duties: Resolution of individual compliance and enforcement cases to achieve statewide consistency in implementation of Prevention Biased Compliance and Enforcement program including FIRST, TURA plan inspection, TURA Amnesty, etc. Tracking of C/E accomplishments and recommendations for future compliance strategies.

SYSTEMS ANALYST - (WILLIAM McGOVERN)

Duties: Responsible for Management Information System support for Facility Master File including TURA elements. Detailed software development support for public access, reporting and implementation of Business Objects software.

CLERK (DIANA LEEMAN) - OPI

DEP TUR RELATED POSITIONS SUPPORTED BY OTHER FUNDS

ASSISTANT COMMISSIONER BUREAU OF WASTE PREVENTION
Duties: Implement the bureau mission to integrate prevention into all bureau programs, DEP designated representative to TURA administrative council and TURA advisory board.

DIRECTOR, DIVISION OF HAZARDOUS MATERIALS
Duties: Plan and implement bureau programs for hazardous waste management (M.G.L. c.21C), industrial wastewater discharges (M.G.L. c.21) and toxic use reduction (M.G.L. c. 21I).

*DEPUTY ASSISTANT COMMISSIONER FOR OFFICE OF PROGRAM INTEGRATION
Duties: Implement the bureau mission and specifically the mission of OPI which is to integrate pollution prevention into the bureau programs and to coordinate certain bureau activities. Coordination of DEP responsibilities to Pollution Prevention Roundtable.

** SYSTEMS ANALYST - (JAN CONOVER)
Duties: Responsible for Management Information System support for Facility Master File including TURA elements. Detailed programmatic support for public access, reporting, and user friendly data access.

OFFICE OF PROGRAM INTEGRATION (OPI) STAFF (This office is responsible for ensuring Toxic Use Reduction/Pollution Prevention is integrated into all BWP activities. The office coordinates activities in the areas of: Compliance/Enforcement, Permitting, Policy/Regulatory Development, Training, Planning, Facility Reporting and Non-Facility/Consumer Activities.):

REGIONAL PLANNER V - OPI PERMITTING COORDINATOR
Duties: Statewide coordination of Prevention Biased permitting programs including incorporating TURA planning techniques in prepermitting analysis through the DEP Northeast Region Pollution Prevention Permitting Pilot. Program and policy development including development of new more efficient permitting materials and other projects to reduce DEP level of effort in permit reviews.

REGIONAL PLANNER V - NERO POLLUTION PREVENTION PERMITTING PILOT COORDINATOR
Duties: Work directly with firms interested in reducing or eliminating their permit obligations through the implementation of TUR strategies. Working with EPA and the regulated community to identify, verify and resolve permitting barriers to TUR strategies implementation.

* Position funded through TURA until 3/94
** Position funded through TURA FY 95

FOUR ENVIRONMENTAL ENGINEER Vs - BWP REGIONAL COMPLIANCE/ENFORCEMENT CHIEFS.
Duties: Management of field compliance and enforcement staff responsible for implementation of Waste Prevention FIRST. Implementation of pollution prevention biased enforcement through individual case decisions. Primary contact between DEP field staff and Office of Technical Assistance field staff.

REGIONAL PLANNER IV - OPI POLICY AND REGULATORY DEVELOPMENT COORDINATOR
Duties: Coordination of Bureau policy and regulatory development to ensure consideration of TURA/pollution prevention principles in all bureau policy and regulations. Represents TURA and BWP perspective on DEP-wide policy committee. Coordinates DEP participation in newly formed three agency (DEP, TURI and OTA) task force on policy development.

REGIONAL PLANNER IV - OPI PLANNING AND TRACKING COORDINATOR
Duties: Development of a bureau-wide program plan which stresses integration of prevention into all aspects of BWP program implementation. Development of tracking information for use by senior program managers in evaluating progress toward Bureau goals.

REGIONAL PLANNER IV - OPI FACILITY REPORTING COORDINATOR (currently vacant)
Duties: Working with the regulated community, BWP programs and EPA to develop integrated reporting for both state and federal programs. This effort has two goals 1.) to reduce redundancy and administrative burden and 2.) to improve accuracy and usefulness of the data.

REGIONAL PLANNER IV - OPI NON-FACILITY/CONSUMER COORDINATOR (currently vacant)
Duties: Coordination of BWP programs to develop systems to facilitate TUR/pollution prevention opportunities and applicable regulatory compliance related to consumer products and very small commercial and industrial facilities not generally permitted by DEP. E.g., reducing toxics in paints, household cleaners, etc.

TWENTY SIX BWP PROGRAM STAFF ASSIGNED TO OPI TEAMS -
Duties: Each BWP Division and Program has assigned one or more staff to work 20% of their time to support the work of the OPI teams established for compliance/enforcement, permitting, training, regulation/policy development, planning/tracking. In the future staff will be assigned to the reporting and non-facility/consumer teams. Team members are responsible for providing "home program" expertise to each team to integrate activities and foster TUR/pollution prevention into all team responsibilities.

THIRTY SEVEN BWP REGIONAL FIRST INSPECTORS

Duties: Regional FIRST inspectional staff conduct all BWP program inspections in a multi-media fashion with an emphasis on pushing for TUR/pollution prevention in both routine compliance response communications an in appropriate enforcement actions to correct identified non-compliance. Facilities are also routinely referred to OTA for TUR assistance.

ATTACHMENT E (CONT)

DEP PERSONNEL AND CONSULTING COSTS BY FISCAL YEAR

FISCAL YEAR 1991:

DEP STAFF: $53,319.44

		STARTING DATE: TURA $
LQTU:(3)	Suzi Peck	1/91
	Cynthia Chaves	1/91
	Susan Greene	6/91
	Alissa Katz (Funded through RCRA Grant monies only)	
IWW:(1)	Gene Romero	6/91
FIRST:(1)	Lee Dillard	12/90

TEMPS: $11,000

CONTRACTUAL COSTS: $157,500 for TURA FMF Database

FISCAL YEAR 1992:

DEP STAFF: $310,160.00

LQTU:(5)	Suzi Peck	
	Cynthia Chaves	
	Susan Greene	
	Walter Hope	6/91
	Alissa Katz (Funded through RCRA Grant monies only)	
IWW:(1)	Gene Romero	
FIRST:(4)	Lee Dillard	
	Carl Natho	7/91
	Roberta Baker	9/91
	Doug Fine	12/91

CONTRACTUAL COSTS: $ 314,000 for TURA FMF Database

FISCAL YEAR 1993:

DEP STAFF: $440,168.91

LQTU:(6)	Suzi Peck	
	Cynthia Chaves	
	Susan Greene	
	Walter Hope	
	Alyssa Katz	1/93
	Lynn Heisey	7/93
IWW:(1)	Gene Romero	

FIRST:(5)	Carl Natho	
	Roberta Baker	
	Doug Fine	
	Martha Caldwell	3/93
	Sandra Hurlbut	1/93
OPI:(2)	Lee Dillard	
	Diana Leeman	5/93

TEMPS: $ 2,333

CONTRACTUAL COSTS: $ 17,467 MIS
$ 28,729 Janet Bowser for reg. development

FISCAL YEAR 1994:

DEP STAFF: $714,267.46

LQTU:(7)	Suzi Peck	
	Cynthia Chaves	
	Susan Greene	
	Walter Hope	
	Alyssa Katz	
	Lynn Heisey	7/93
	Tracy Klay	7/93
IWW:(1)	Gene Romero	
FIRST:(5)	Carl Natho	
	Roberta Baker	
	Martha Caldwell	
	Sandra Hurlbut	
	Anita Baltzersen	6/94
OPI:(4)	Lee Dillard*	
	Steve Edelheit	7/93
	Diana Leeman	
	Doug Fine	
ENFORCEMENT:(1)	Geri Lambert	7/93
MIS:(2)	William McGovern	6/94
	Janet Conover (Funded through RCRA grant monies only)	

TEMPS: $ 8,000

CONTRACTUAL COSTS: $ 19,923 Janet Bowser for reg. development

* Funded through TURA until 3/94